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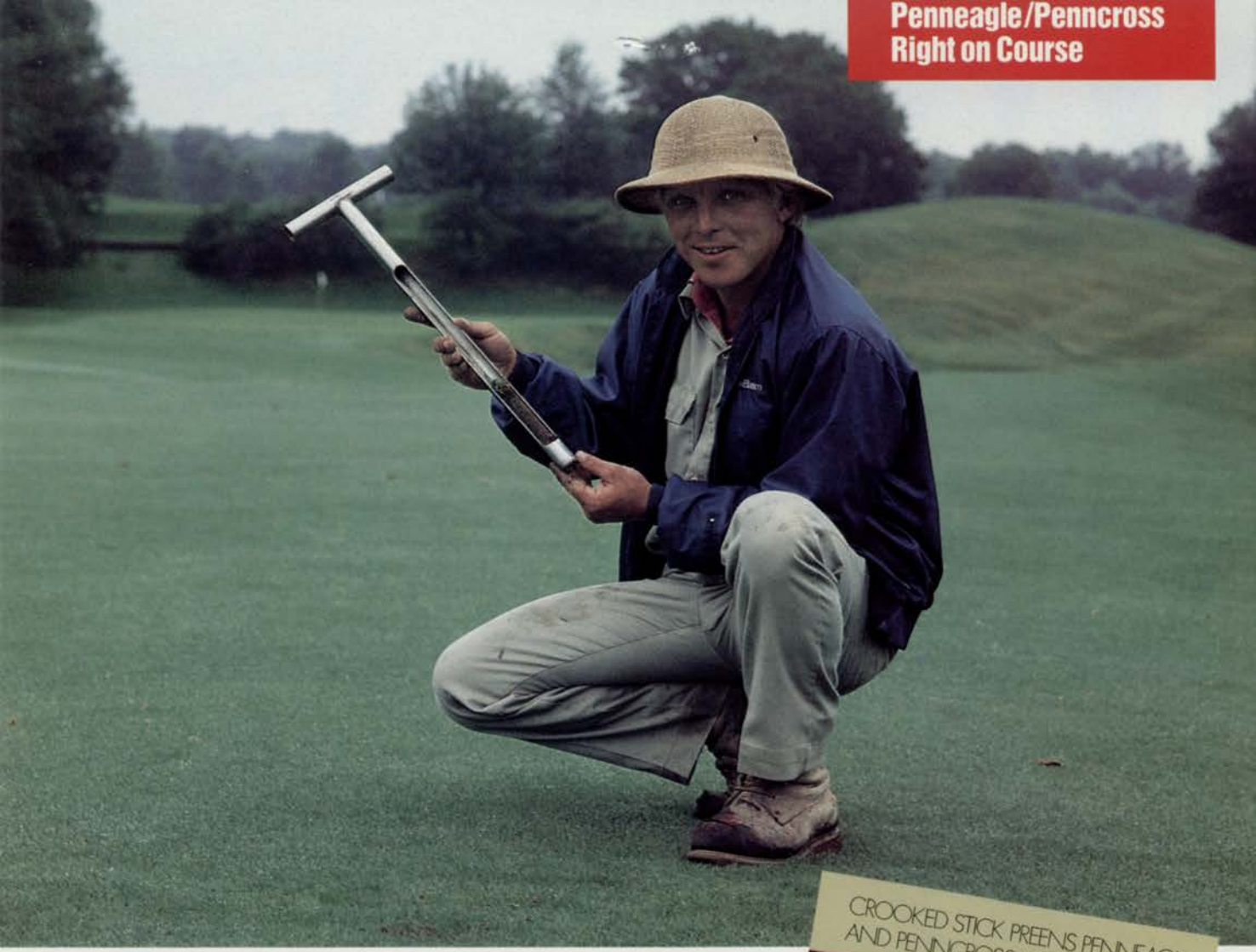

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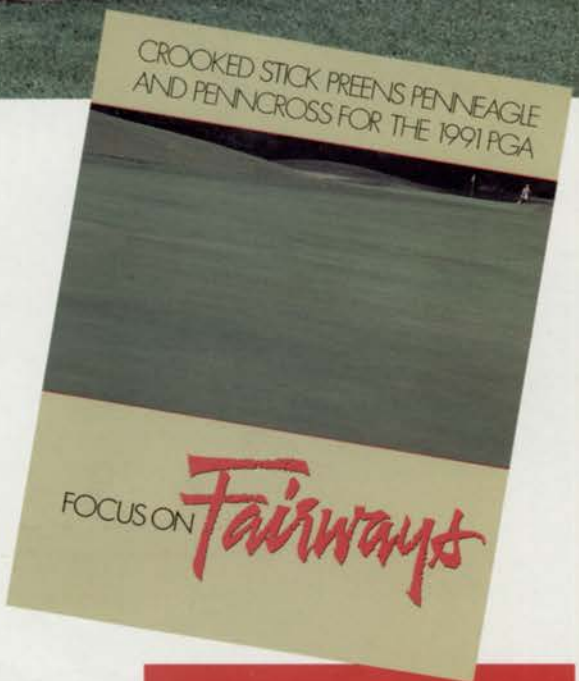

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AUGUST 1991, VOLUME 30, NUMBER 8

LANDSCAPE MANAGEMENT

On the cover: Soil aeration is practiced by Grayling Ross of Custom Lawns in Olmsted Falls, Ohio. Photo by Wayne Rayburn, HW/R Productions.

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AS I SEE IT ...

A season for change?

"Turn, turn, turn," wrote The Byrds. "There is a season..."

The recent U.S. Supreme Court decision signals what could become an immense change in the way pesticide applicators are allowed to do business. Unless you've been on Mars, or had your head stuck in the sand for the past couple of months, you know that the high court ruling allows states and municipalities to enact regulations to supplement the Federal Insecticide, Fungicide and Rodenticide Act (see "Green Industry News").

This is not good news. As a matter of fact, it could put many small lawn care and landscape companies out of business.

Consider the plight of the company that applies pesticides to four or five large properties in each of six or seven communities. A worst-case scenario would have that company lobby its cause with six or seven city councils, comply with six or seven different sets of regulations, and maintain six or seven sets of application records.

How does the green industry cope with this action? Legally, there is no recourse to a Supreme Court decision. Well, maybe there is a viable alternative.

What the justices said with this decision is that the intent of FIFRA is to allow local regulations. This, then, is the law.

What we can read into the decision—a 9-0 whitewash at that—is that the judges are giving our U.S. Senators and Congressmen a much-needed kick in the pants. Since 1972, FIFRA has been a comprehensive regulatory statute that has been largely unworkable on many levels. The government's legislative branch has potted around for nearly six years now with proposed amendments that would make it a much more effective piece of legislation. But our law-makers have not yet been able to push through any of the much-needed changes.

The Supreme Court justices are telling the Senate and House: "You made the law. You don't like it, you change it."

It's the same message our legislators have been hearing for years from the agricultural community, the Environmental Protection Agency, the green industry, agricultural and chemical manufacturers, and just about everyone else with a vested interest in the application of pesticides.

Maybe one of these days our legislators will get the message. Until then, all the professional pesticide applicator can do is cross his or her fingers, then comply with the legislation that is bound to be passed by the Podunk Centers and Burgervilles of the country.

It's the law.

Jerry Roche

Jerry Roche, editor

LM

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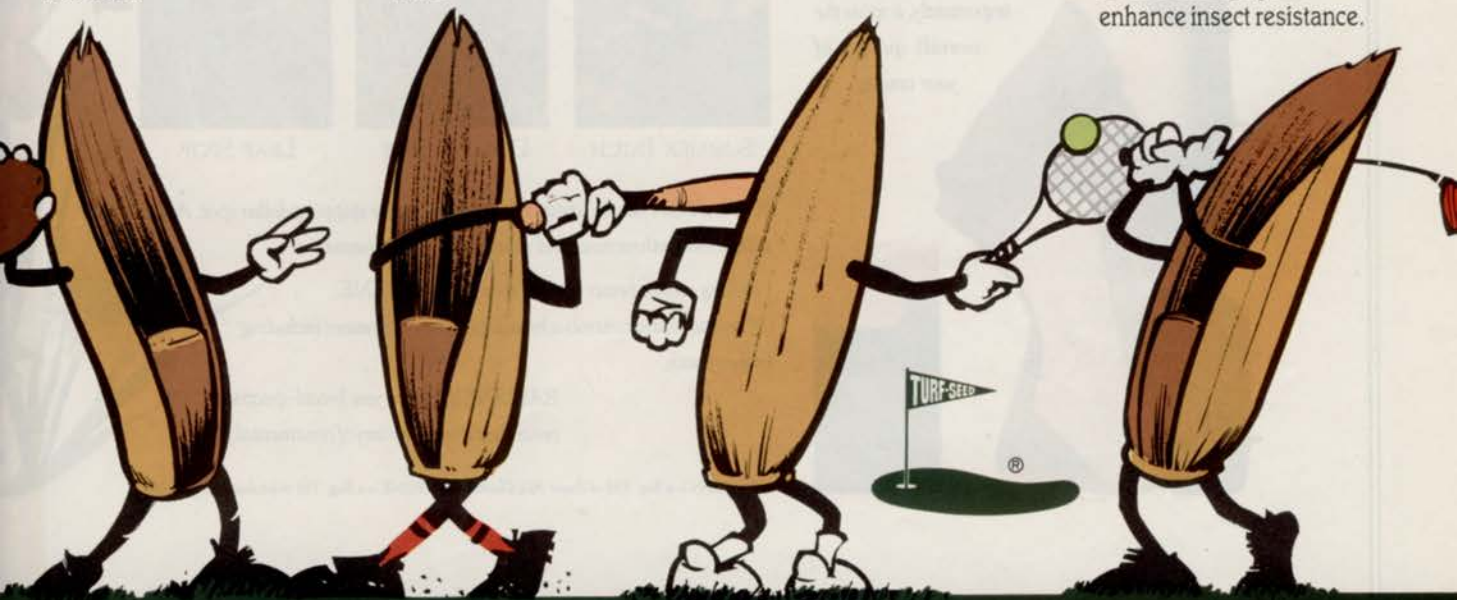

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GREEN INDUSTRY NEWS

AUGUST, 1991, VOLUME 30, NUMBER 8

LANDSCAPE MANAGEMENT

LEGISLATION

High court says localities may regulate pesticides

WASHINGTON, D.C.—The U.S. Supreme Court ruled unanimously that local governments may regulate pesticide use on public lands, private lands subject to public use, or in aerial applications, as the final act of *Wisconsin Public Intervenor v. Mortier* was played out June 24th.

What does this mean for the professional pesticide applicator? According to Deb Strohmaier, director of public relations for ChemLawn: "It might not be as difficult to manage (for companies that) are just servicing one or two communities," but ChemLawn, for one, must be concerned about "all the individual possibilities in 45 states."

In two preceeding court battles, representatives for the lawn care industry had argued that the 1972 Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) pre-empted such local regulation.

Allen James, executive director of Responsible Industry for A Sound Environment (RISE), says the court determined that neither FIFRA's language nor its history "provided sufficient justification for pre-empting local regulation of pesticides."

"The decision creates an unworkable framework for the regulation of pesticides," says Ralph Engel, president of the Chemical Specialties Manufacturers Association (CSMA). "Jurisdictions by the tens of thousands now have the authority to impose regulations."

Tom Dawson of the victorious Wisconsin Public Intervenor's office calls that "a garbage argument." He says that many town supervisors are themselves farmers, who would not inflict undue hardship on their own livelihoods.

'Trouble' states where localities have tried in the past to pass local legislation, according to the PLCAA.

Case Western Reserve University law professor William Marshall in Cleveland, Ohio—who is familiar with the case—says a salvo of new regulations will not necessarily follow the decision.

"All the opinion does is say that the federal law allowed for localities to engage in additional kinds of restrictions if they wanted to," says Marshall. "That's neither an incentive nor a disincentive for localities."

Strohmaier doesn't expect a rash of local action, but suspects certain areas of the U.S. previously active against pesticides to now be motivated further. Strohmaier suspects that more legislative activity will occur next spring, as companies gear up for the new season.

Dawson says he hopes that perhaps now the pesticide industry will agree to "help draft model ordinances."

—Terry McIver □

Congress may intervene

WASHINGTON, D.C.—What remains to be seen in the epilogue to the Wisconsin/Mortimer courtroom drama is the amount of legislative action to be taken by communities.

"The ruling," says CSMA's Ralph Engel, "makes it extremely important that Congress once and for all closely re-examine the issue of local preemption, and expressly state in FIFRA that local jurisdictions are preempted from regulating pesticides—products that are already heavily and effectively regulated on a national level."

Congress would certainly be pressured further to amend FIFRA, if what results is indeed a "patchwork quilt" of divergent laws. Justice Byron White, in writing for the court, concluded that "Congress is free to find that local regulation does wreak havoc, and enact legislation with the purpose of preventing it."

Allen James says RISE will consider whether it will seek a FIFRA amendment immediately, or wait for localities to begin passing laws.

—T.M. □

It's time to act—now!

HAZELTON, Pa.—PLCAA president Neal DeAngelo of Lawn Specialties expects the Supreme Court's ruling to have "immediate impact" as local municipalities resurrect past, failed initiatives. An example is Pennsylvania's Packer Township, which tried to initiate a pesticide ban 18 months ago.

Although DeAngelo expects "some activity" in the way of ban initiatives, he does not believe pesticide bans will ever catch on.

DeAngelo insists that industry must take "immediate action," preferably by joint efforts between the PLCAA and state lawn care associations.

"If we can nip a lot of these (proposed laws) in the bud, and stop them from ever beginning in the first place," says DeAngelo, "I think we'll do our industry a great service."

Neal DeAngelo

DeAngelo says associations need financial support and time commitments to relay information, "whether it's just brochures, whether it's video tape programs, something that they can take to their local garden clubs and rotary clubs and borough officials to help educate them." —*T.M.* □

PESTICIDES

Pro golfer questions source of health woes: could it be pesticides?

An Oregon professional golfer has been told his health problems may be the result of pesticide ingeston from the course. However, questions remain about the mysterious case which has set off some alarms in the golf and green industries.

Golfer Peter Jacobsen has said his symptoms of dizziness, listlessness and fatigue may not be a sinus condition, but rather linked to the practice of putting golf tees into his mouth after they'd been used on the turf surface.

Jacobsen's case figured centrally in a mid-June (Salem, Ore.) editorial which condemns chemical use in many lawn care operations, terming his case a "living example of a problem that few realize and even fewer want to acknowledge: the danger of a perfect lawn."

According to Oregon Golf Course Superintendents Association president Dick Malpass, Jacobsen learned from a homeopathic doctor that some phosphosaure E has settled in his liver. But Malpass says he has checked with Oregon State University officials who have told him that they'd not heard of the substance.

"We're just keeping our fingers crossed, waiting to see how this will be resolved," said Malpass in mid-June. "We've put out feelers. The main thing now is to find out if there is just such a chemical."

Therein lies the mystery.

Oregon State University toxicologist Terry Miller, contacted by Malpass, says he has never heard of phosphospaure E.

"I can't find it anyplace,

to page 12

NEWS BRIEFS

RETIREMENT INVESTMENTS...Alabama has come up with a unique idea for developing new high-quality public golf courses: let state employees invest retirement funds. At least 12 championship-caliber courses are now planned. "Golf courses are a sound investment, so we've taken a leadership role in their development and construction," says Dr. **David Bronner**, CEO of Retirement Systems of Alabama.

ON TO DALLAS...The Golf Course Superintendents Association of America has moved its 1994 conference and show from Houston to Dallas. The show, Jan. 31 to Feb. 7 three years hence, was moved because it outgrew Houston's George R. Brown Convention Center.

A UNIQUE IDEA...The Grounds Management Association of Wisconsin added a unique public relations tool this year: sponsorship of a poster contest titled "Benefits of Turf." The competition was open to any sixth- through eight-grader in the state, and 500 posters were received. Winners at each level received $200 savings bonds, and the grand prize winner received an all-expense paid family trip to a Milwaukee Brewers baseball game, hosted by Brewers grounds manager **Gary Vandenberg.**

A NATIONAL CELEBRITY...**Bill Thornton**, president of Thornton Environmental Industries, Maineville, Ohio, has been named to the board of directors of the National Federation of Independent Business. The NFIB is the nation's largest small-business advocacy organization, headquartered in Washington, D.C. Founded in 1946 by Thornton's father, the company employs more than 150 people during the peak landscaping season.

AWARD-WINNERS...Nichols Lawn Service of Wichita, Kan. and the F.A. Bartlett Tree Expert Co. of Stamford, Conn. were recently winners of prestigious awards. Nichols was named 1991 Prime Contractor of the Year for four states by the Small Business Adsministration. President **Larry Nichols** was honored two months ago in Washington, D.C. Bartlett was one of four corporate recipients of the Green Star award presented by the Environmental Action Coalition of New York, N.Y. President **Robert A. Bartlett Jr.** accepted the award for the company's urban and suburban tree preservation programs.

'OVER THERE'...**George Toma** of Kansas City, turf consultant to the NFL, has been helping prepare playing surfaces in Japan and Germany this summer. Japan was to host an exhibition game between the Denver Broncos and the Seattle Seahawks on Aug. 4. Kansas City was to play the Los Angeles Rams there on Aug. 11. When Toma visited Tokyo's MacArthur Park, he was greeted by Tokyo Parks Department and other officials.

LM

GOLFER *from page 11*

but that doesn't necessarily mean it doesn't exist," says Miller.

He says he checked with the distributor of an insecticide believed to be the problem, as well as with the original supplier, but neither source had heard of the compound. Neither had a turf professor at the university.

The June 13 "Statesman-Journal" editorial, entitled "Oregon golfer an example...Perfect lawn can make you ill," says the Jacobsen case exhibits "what problems youngsters might have with toys, balls and other objects that have rolled about in their own yards."□

PRODUCTS

EPA registers new pre-, post-emergent

ST. LOUIS—Dimension herbicide, manufactured by Monsanto, received EPA registration in June.

Dimension controls crabgrass, goosegrass, foxtail, spurge, oxalis and other weeds.

Product manager Jim Budzynski says it may be used for pre- and post-emergence weed control.

The active ingredient in Dimension, dithiopyr, is environmentally desirable in part because of low use rates, the company says.

Budzynski says Dimension has provided longer crabgrass control than other pre-emergence herbicides, and does not interfere with fall overseeding.

Dimension can be applied over a wide variety of turfgrasses without damage to foliage or root systems, Monsanto says. The herbicide will also not injure ornamentals near treatment areas, according to the company. □

TURFSEED

New burning fees won't hurt buyers

TANGENT, Ore.—New field burning fees charged to seed harvesters will apparently have little immediate effect on seed prices.

"I don't think you'll see dramatic changes in prices," says Dave Nelson of the Oregon Fine Fescue Commission, which negotiated the fee system with state legislators.

"The cost to farmers will probably go up by as much as $35 an acre," says Nelson. "On a 1000-pound yield, that's going to be 3-1/2 cents a pound."

Jim Enyart of Turf Seed, Inc., is more cautious. He says it's too early to say which way prices will go. But he sees no drastic change in prices this year.

"Until we get some viable alternatives (to burning), it's hard to say. Everybody's talking like it's going to drive the price up, but I'd reserve judgement until we have to start reducing the burning."

This year under the new fee schedule, 180,000 acres may be burned and 75,000 acres may be propane flamed, each at a cost of $8 an acre. Burnable acreage will decrease to 40,000 by 2001 when an additional 75,000 acres may be propane flamed, provided particulate matter discharge does not go beyond a proscripted minimum.

"There will be more stability over the long run, but not much effect on prices in the short run," says Steve Tubbs of Turf Merchants, Inc.

Tubbs says the burn legislation might ultimately hurt bluegrass yields, because burning is especially beneficial to bluegrass.□

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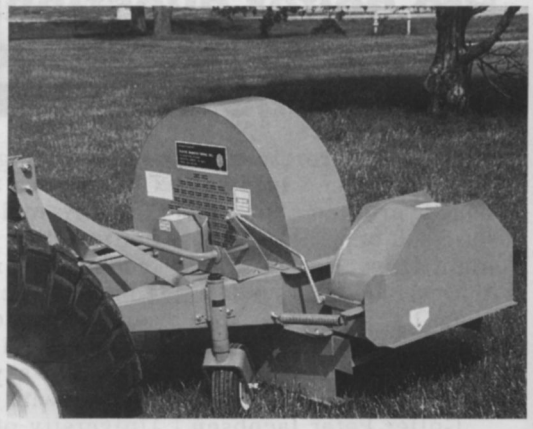

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Model 61 Leaf & Debris Blower

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Model 31 Leaf and Debris Loader

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Paying dividends

The high school coach whose student-built ball diamond was named Beam Clay "Diamond of the Year" now has a new 30-inch reel mower for grooming the infield turf. It was delivered as a gift to the Middlesex County Vocational-Technical School in East Brunswick, N.J. by Locke Mowers Inc.

Locke vice president **Ian Burden** presented the mower to Coach **Ray Cipperly**, school principal **Carl J. Klumb** and school superintendent Dr. **J.H. Zanzalari**.

Coach Cipperly also has an 87-inch Locke Professional mower.

Bounce per pounce

Dr. **Jeff Nus** of Kansas State University is studying a way to add "mini-shock absorbers" to the rootzones of practice football and soccer fields that may otherwise become compacted.

Nus has a granulated polymer that resembles triple-strength gelatin when water is added to it. After one year of applying the polymer to Manhattan, Kansas's Frank Anneberg Sports Complex fields via aeration, soil compaction has been reduced.

The polyacrylamide granules, each about the size of a BB, can absorb from 50 to 1,000 times their weight in water. When added to turf, the expanding granule seems to loosen the soil. They stay active from four to seven years.

"During the next year, we'll be adding acrylamide at rates from zero to extremely high rates," Nus says. "We want to find the upper limit for the use of these materials. We want to soften playing field some, but we don't want to create a marsh, either."

Nus is working with graduate student **Mike Boaz**. The study is funded by a $20,000 grant from Olathe Manufacturing.

New turf in Atlanta

Southern Turf Nurseries was chosen to provide new turfgrass for the recent field renovation of the Atlanta-Fulton County Stadium. The renovation was undertaken to rectify problems caused by non-sports events.

Tifway 419, overseeded with Laser *Poa trivialis* was chosen by Southern's turf consultant **Turner Gibson** and his team of division manager **Steve Mathis** and project manager **Steve Quinn**.

The new field was changed from a baseball/football combination field with a crown to a traditional baseball configuration, which is a level grade.

Ed Mangan, new field manager for the Atlanta Braves who most recently was field manager for the Kansas City Royals' spring training facility in Florida, is now in charge of maintenance. **LM**

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Turfco Mfg. Inc., 1655 101st Ave. NE, Minneapolis, MN 55434
Phone (612) 785-1000 Fax (612) 785-0556

The *TOP* Top Dresser Mete-R-Matic III

95% Customer Satisfaction

Course superintendents know who's the best. Surveys show they choose Turfco's Tow-Type Top Dresser for superior performance. The new Mete-R-Matic III Tow-Type lowers PSI by one-third with its unique ground-driven design. It's the best Turfco top dresser yet!

- **Huge 22.5 cu. ft. capacity**
- **New 6-wheel design lowers PSI**
- **Distributes evenly**
- **Ground driven, no engine, no hydraulics**

When you want the best . . . get a *TURFCO*

Circle No. 129 on Reader Inquiry Card

"Are you kidding? Spray herbicide over the top of my flowers?
Surflan* proved I could."
Cynthia Harper
Color Burst, Atlanta, Georgia
Ritz-Carlton, Buckhead
Atlanta, Georgia
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"I was hesitant to try it at first. I thought, surely, there would be some injury to my flowers. But Surflan herbicide convinced me otherwise. It didn't harm them at all when we sprayed directly over the top.

"Surflan wasn't so gentle to the weeds. We used to have a real problem with crabgrass and foxtails. We'd have to go in and pull them all by hand. It was so time-consuming. I figured I was paying close to $50 for each thousand square feet just for labor.

"But with Surflan, the job took only minutes. And cost me less than $1.50 for what used to cost me almost $50.

"Surflan also took care of our oxalis and chickweed. And many other problem weeds, too. For almost eight months."

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EXPLORE HOW DYLOX RE PROGRAM AND YOU'LL DISCOV

DYLOX stops grubs in 24 to 48 hours. Nothing works faster.

To identify grub infestation, look for wilted or dying turf. The pruned roots make it easy to pull back the turf like carpet.

Choose DYLOX Insecticide in a soluble powder or now in granular form.

DYLOX doesn't have the restrictions that limit other products. You can treat tees and greens as well as fairways.

In addition to grubs, DYLOX controls cutworms, sod webworms and armyworms.

JAN. FEB. MAR. APR. MAY JUN. JUL. AUG. SEP. OCT. NOV. DEC.

You'll find grubs at various depths according to their development, soil moisture and temperature.

Scout and document grub populations, then time applications accordingly. This eliminates unnecessary applications.

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LATES TO A PRE-DAMAGE ER SOME IMPRESSIVE LINKS.

Irrigate a day prior to treatment. Water in an application to a depth of 1 to 1½ inches.

DYLOX controls all species of white grubs including the Japanese Beetle and the Black Turfgrass Ataenius Beetle.

Top grub control experts agree that a pre-damage program offers the most effective and efficient use of insecticide. Of course, you need a product that works fast after you identify a problem and before damage occurs.

Look how DYLOX® Insecticide fits. It doesn't require the lead time other insecticides need to control grubs. Nothing stops grubs faster.

Connect DYLOX with your pre-damage program. And discover some impressive links of your own.

For more information contact your Mobay representative or Mobay Corporation, Specialty Products Group, Box 4913, Kansas City, MO 64120. (800) 842-8020.

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INFO-CENTER

CRABGRASS CONTROL...A 10-minute video on strategies for controlling crabgrass with Acclaim 1EC herbicide is available from Hoechst-Roussel Agri-Vet *free* to lawn care operators. To receive a copy, write to: Crabgrass Control Strategies, 3343 Peachtree Rd., Suite 1220, East Tower, Atlanta, GA 30326.

ON THE ENVIRONMENT...Golf superintendents who have been frustrated by negative reports about golf courses now have "Links with Nature," a 14-minute video to help respond to misconceptions about golf course management. Price is $20 for GCSAA members and $30 for non-members. To order, call (913) 832-4480.

WESTERN WEEDS...More than 300 weeds found in 12 western states have been identified in a new book available through the New Mexico State University Cooperative Extension Service. "Weeds of the West" is directed at anyone with weed problems. Copies are $19.50 each. To order, phone Diane Lopez at (505) 646-5280.

PESTICIDE DIRECTORY...Thomson Publications has released its newly-revised "1991 Pesticide Directory." Cost is $75 plus tax. For ordering information, write P.O. Box 9335, Fresno, CA 93791 or phone (209) 435-2163. Thomson's fax number is (209) 435-8319.

ON MOWER SAFETY...A 20-minute video on commercial mower safety and preventive maintenance is available for $15 (plus sales tax in Illinois and Iowa). To order, phone (800) 544-2122 or write to: Responsible Front Mower Operation (DS0457), John Deere & Co., Distribution Service Center, Safety Films Dept., 1400-13th St., East Moline, IL 61244. Credit card and money orders are accepted.

COST ESTIMATING...The University of Georgia Cooperative Extension Service has a revised 3.2 version of Hort Management computer cost estimator for landscape managers. It operates on SuperCalc 4 or SuperCalc 5 software which must be purchased through private vendors. The program can be purchased by sending $10 to: Extension Ag Economics Dept., Hort Management Software, The University of Georgia, Athens, GA 30602.

A CHEMICAL REFERENCE..."Turf & Ornamental Chemicals Reference" is available through the Professional Lawn Care Association of America for September shipment. Cost is $95 for approximately 1200 pages of information. Send your check payable to the PLCAA to: Turf & Ornamental Chemicals Reference, 1000 Johnson Ferry Rd. NE, Suite C-135, Marietta, GA 30068-2112. **LM**

REDUCE WATER COSTS, INCREASE TURF QUALITY

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For information on ISOLITE or a Distributor in your area,
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1-800-533-7165

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SPECIAL LIMITED TIME OFFER

USED TRUCK SPECIFICATIONS

ITEMS	MEDIUMS			1-TON
ENGINE	366 V8	366 V8	366 V8	350 V8
FRONT AXLE	7,000	7,000	9,000	—
REAR AXLE	17,000	17,000	18,500	7,500
TRANSMISSION	5-SPEED	5-SPEED	5-SPEED	AUTOMATIC
BODY	18' FRP	22' FRP	24' FRP	14' FRP
STEERING	POWER	POWER	POWER	POWER
FUEL TANK	50 GAL.	50 GAL.	50 GAL.	33 GAL.
DOORS	ROLL-UP	ROLL-UP	ROLL-UP	ROLL-UP
TIRES	10-22.5	10-22.5	11R-22.5	8.75 R16-5
WHEELS	DISC	DISC	DISC	DISC

"LOTS OF MILES LEFT"

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6.0 LITER V8 ENGINE

All of the Medium used trucks are equipped with this proven engine generating 200 SAE Net Horsepower at 3800 RPM. Combine that with 300 (lb/ft) of torque at 3200 RPM (SAE Net) and you have a truck that can meet some of the most demanding load requirements.**

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All of the Medium trucks were designed to support the driver during those long hours on the road. Each truck is equipped with a full bench seat, full gauge instrumentation, sound deadening materials to reduce noise, 3 safety belts and a forward folding seat back.

CALL NOW AND LET US FIND THE RIGHT TRUCK FOR YOU

1-800-843-6900

** Trucks equipped with California emissions have slightly different net H.P. and net torque ratings.

* CALL 1-800-843-6900 FOR QUALIFICATION DETAILS. Dealer financial participation may affect purchase cost.

Circle No. 105 on Reader Inquiry Card

LEGISLATION

Local pesticide regs tough to enforce, don't make sense

MAYFIELD VILLAGE, Ohio—Enforcement of a pre-notification law here has authorities, LCOs and homeowners confused.

"The ordinance...is really quite unenforceable," says Phil Fogarty, president of the Ohio Lawn Care Association and Crowley Lawn Service, Inc. in Cleveland. The company operates in the village.

"I don't know how we're going to police it," says Gus Amendola, Mayfield's building commissioner charged with enforcing a 1987 pre-notification law. That law requires that all abutting property owners be given 24 hours notice before pesticide applications by either professionals or homeowners.

According to law director, Fred P.Ramos, applicators will be notified of the law: "We want to be fair. We don't want to be citing people tomorrow, says Ramos."

Amendola says he was told to start enforcement immediately.

"I'm a little skeptical," says Amendola, "because the 24-hour notice will be difficult." He expects notices to be placed in mailboxes. "Someone could put the notice in the mailbox at 2 o'clock in the morning and then come back and spray at 8 a.m. How do I know what time they (put the notice in the mailbox.)?"

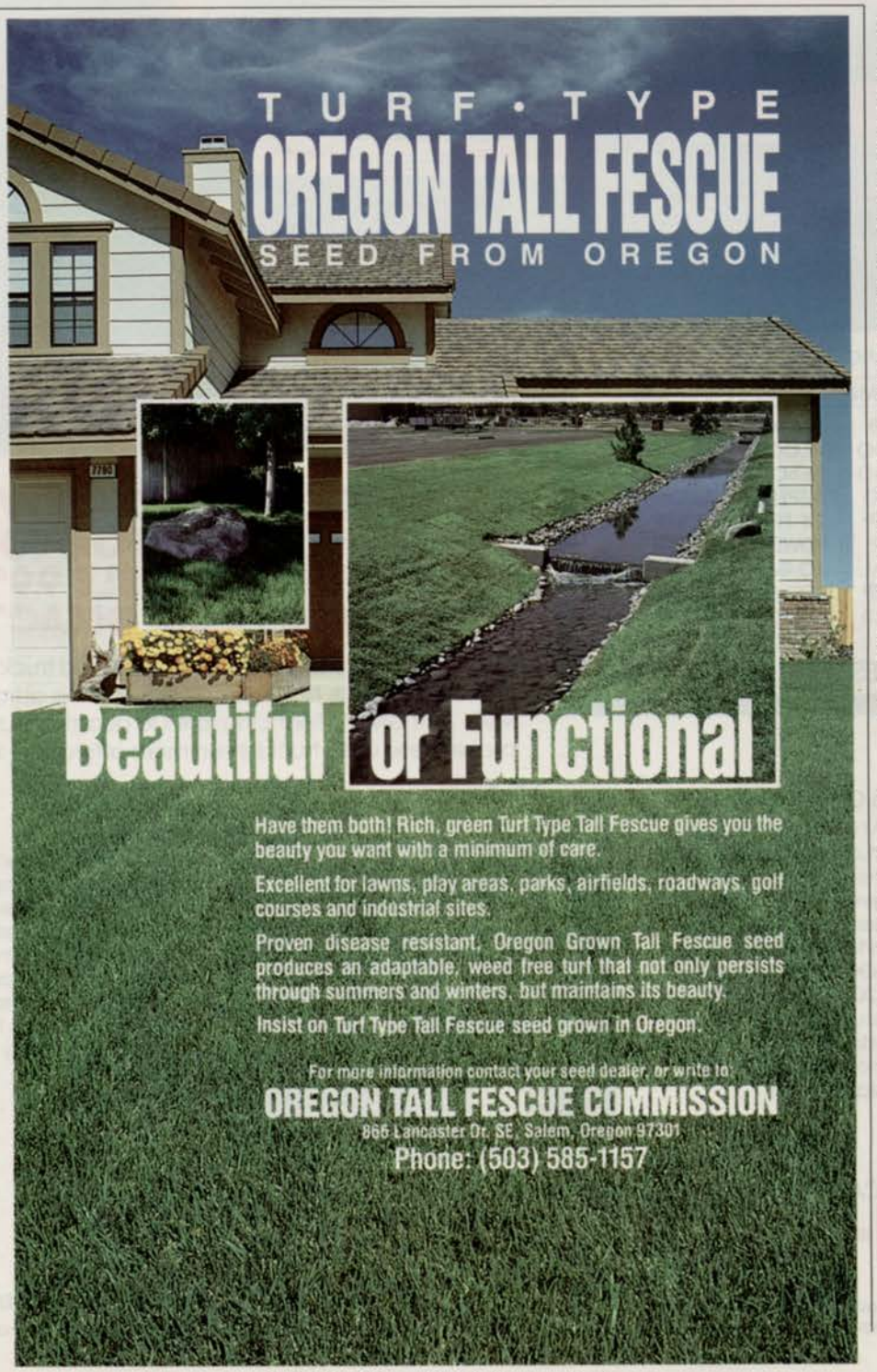
Citizens who work during the day are another concern. "People will not get their mail until they come home," Amendola points out.

Also, it's against federal law to place non-mailed items in mailboxes.

Fogarty is trying to come up with a sensible ordinance that can be used in Mayfield and surrounding communities. "I'm attempting to get these cities to sit down with the industry and environmental people and work something out," he says. Fogarty admits that he has a tough job when it comes to seeking suitable pesticide ordinances. The co-host of a gardening radio show, Fogarty is bringing 2,4-D developer, Wendell Mullison, to town. The plan was to have Mullison meet with local officials, yet one mayor up for re-election this fall told Fogarty that he wouldn't be seen in public with Mullison.

Fogarty still hopes a solution can be negotiated. "I'm trying to get something accomplished, not draw battlelines," he says.

—Jim Guyette □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Phone: (503) 585-1157
Circle No. 121 on Reader Inquiry Card

EVENTS

AUGUST

13: Associated Green Industries of Northeastern Ohio summer field day, Great Lakes Evergreens, Madison, Ohio. Contact: AGI, (216) 572-2784.

15: The Wisconsin Nurserymen's Association,summer field day and trade show, Lied's Nursery Farms, Sussex, Wisc. Contact: (414) 246-7445.

21: Michigan Nursery and Landscape Assoc.,field day, The Cottage Gardens, Inc., Lansing, Mich. Contact: MNLA, 819

continued on page 50

News from Monsanto...

ROUNDUP®
HERBICIDE
PRICE CUT
$22
ON 2½'S!

Monsanto has lowered the price of Roundup® herbicide by $22 on the 2½ gallon container size!

The price is even lower in 30's. Now you'll find even *more* value in Roundup and *more* places to use it *more* often.

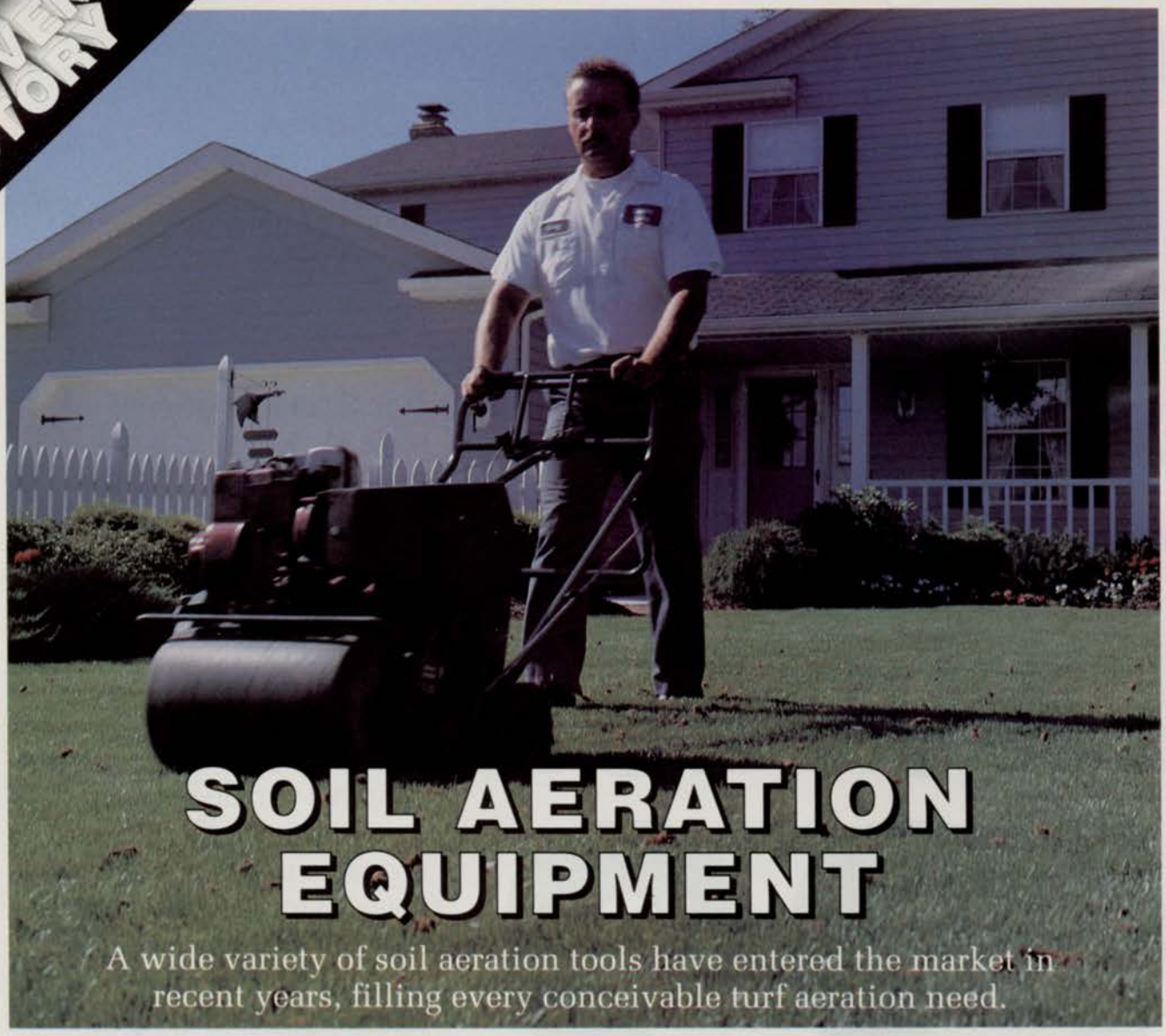
Think of the budget-stretching savings Roundup can bring you compared to time-intensive string trimming. Or the labor-savings in using lower-priced Roundup to maintain weed-free beds and pine islands. Use it to eliminate brush, poison oak, poison ivy...in landscape site preparation and turf renovation.

Figure your savings at the new lower price. Then see your dealer or retailer to save on Roundup.

Always read and follow the label for Roundup herbicide. Roundup® is a registered trademark of Monsanto Company. © Monsanto Company 1991 RGP-1-170BR

Circle No. 114 on Reader Inquiry Card

COVER STORY



SOIL AERATION EQUIPMENT

A wide variety of soil aeration tools have entered the market in recent years, filling every conceivable turf aeration need.

Soil aeration techniques open to green industry professionals have quickly moved from discussion to practice.

A helpful treatment for compaction and thatch, aeration can be accomplished in a variety of ways, perhaps as varied as the equipment. Generally, either solid tine, hollow core (open spoon) and shatter/slicer designs are common. Turf research has suggested solid tining may be less beneficial overall.

Turf in warm-season climates is best aerated in late spring and early summer.

Water entered the picture this year with Toro's HydroJect 3000, which uses high pressure water coring.

Giving the turf "room to breathe" at the right time saves later headaches as grass roots welcome the opening of the turf surface to air and moisture.

Options range from model to model, manufacturer to manufacturer. Superintendents, landscape and lawn care operators, and sports turf

continued on page 26

For more aerator information

Specifications for shatter/slicer aerators available to landscape professionals can be found on page 26.

Specs for core aerators can be found on the following page and page 24.

To obtain information from individual companies, circle the numbers listed below on the Reader Service Card.

Shatter/slicers

Co. name	Circle No.
Aer-Way	300
Brinly-Hardy	301
Cushman	302
John Deere	303
Feldmann	304
Green Care	305
Hoffco	306
Olathe	307

Core aerators

Co. name	Circle No.	Co. name	Circle No.
Befco	308	Hahn	311
Brinly-Hardy	301	Jacobsen	312
Cushman	302	Lesco	313
John Deere	303	Olathe	307
Feldmann	304	Ransomes	314
First-Products	309	Terracare	315
Gandy	310	Toro	316
Green Care	305	Verti-Drain	317

CORE AERATORS

Manufacturer	Model	Pull/Walk/Ride	Penetration	Plug Diameter	Overall Width	Weight (lbs.)	Speed
Befco[1]	Green-Rite I	pull	1"	N/A	52"/68"/84"	1,383/1,636/ 2,063	conditional
Befco	Green-Rite II	pull	1"	N/A	50"/58"/66"	N/A	conditional
Befco	Green-Rite III	pull	1"	N/A	58"	N/A	conditional
Befco	Green-Rite IV	ride	1"	N/A	58"/66"/74"	N/A	conditional
Brinly-Hardy	CA-30 BH	pull	N/A	N/A	30"	75	conditional
Brinly-Hardy	CA-36 PR	pull	N/A	N/A	36"	84	conditional
Brinly-Hardy	AS-24 BH	pull	2"	N/A	24"	50	conditional
Cushman	Ryan DGA 30-06 Model 544882	ride	4"-6"	1/2"-3/4"-7/8"	30"	1,960	up to 19,920[3]
Cushman	Ryan GA 30 Model 544875	ride	3 3/4"	5/8"	30"	1,200	up to 28,125[3]
Cushman	Ryan Greensaire 24 Model 544872	walk	3"	1/2"	24"	800	up to 8000[3]
Cushman	Ryan Lawnaire 28 Model 544874	walk	2 1/2"	3/4"	28"	400	up to 24,000[3]
Cushman	Ryan Lawnaire IV Model 544863	walk	2 3/4"	3/4"	19"	188	up to 21,000[3]
Cushman	Ryan Lawnaire V Model 544883	walk	2 3/4"	3/4"	26 1/2"	218	up to 29,300[3]
Cushman	Ryan Lawnaire Tow 36 Model 544860	pull	4"	1/2"or3/4"	36"	500	up to 10 mph
Cushman	Ryan Lawnaire Hitch Model 544859	pull	4"	1/2"or3/4"	36"	475	N/A
Cushman	Ryan Lawnaire Hitch Model 544876	pull	4"	1/2"or3/4"	48"	675	N/A
Cushman	Ryan Renovaire Hitch Model 544317	pull	4"	1/2"or3/4"	72"	1,445	up to 10 mph
Cushman	GA 60	pull	4"	3/4"	60"	2,209	up to 1.3 acres/hr
Cushman	Quick Aerater	pull	5"	1/2"or3/4" slicing knives	46"	N/A	N/A
Cushman	Greensaver Model 884716	pull	2 3/4"	3/8" or 1/2"	22 3/4"	N/A	N/A
John Deere	132/232	pull	N/A	1/2"or3/4"	32"	N/A	conditional
John Deere	270	pull	N/A	1/2"or3/4" Slicer blades	72"	N/A	conditional
Feldmann	2300	walk	2 1/2"	(Slicer available)	26"	128	1,800[3]
Feldmann	2340-32/2340-48	pull	2 1/2"	1/2"	32"	85/100	conditional
Feldmann	2552/2528	pull	2 1/2"	1/2"	32"/48"	83/98	conditional

[1] Befco aerators are also overseeders & fertilizers [2] Model also a seeder/fertilizer [3] Square feet per hour

CORE AERATORS

Manufacturer	Model	Pull/Walk/Ride	Penetration	Plug Diameter	Overall Width	Weight (lbs.)	Speed
First-Products	Aera-rator	pull	3"	1/2"	60"	635	3 1/2 mph
Gandy	aerater attachment	pull	2 1/2"	N/A	24"	N/A	conditional
Green Care	Core Master 12	pull	3 3/4"	1/4"-3/8"-1/2"-5/8"-3/4"	49"	N/A	conditional
Green Care	Core Puppy	walk	3 3/4"	1/4"-3/8"-1/2"-5/8"-3/4"	25"	650	conditional
Hahn	TB-60/TM-60	pull	N/A	N/A	32"	550/500	conditional
Hahn	TM-140/TB-140	pull	N/A	3/4" or 1"	72"/90"	672/954	conditional
Hahn	EA-3	walk	N/A	N/A	22"	166	conditional
Jacobsen	Aero King PT 2448	pull	3"	1/4"-3/8"-1/2"	48"	885	conditional
Jacobsen	T 3019	walk	3"	3/4"	19"	250	24,000[1]
Jacobsen	P 4024/T 6030	walk	3"	1"	24"/30"	240/285	24,000[1]/30,000[1]
Lesco	Aerator 30	walk	3"	5/8"	30"	254	conditional
Olathe	88	walk	3 1/2"	3/4"	32 1/2"	260	19,000[1]
Ransomes	XRA 550R/XRA 540	ride	up to 6"/up to 5"	1/4"-3/8"-1/2"-5/8"-3/4"	54"	1,600/1,200	up to 60,000[1]
Ransomes	XRA 240	walk	2 3/4"	5/8"-3/4"	24"	440	25,800[1]
Ransomes	XRA 250/XRA 270	walk	4"	1/4"-3/8"-1/2"-5/8"-3/4"	25"	440	25,800[1]/13,900[1]
Terracare	WR 2[2]	walk	2 3/4"	1/2"-5/8"	36"	600	3/4 acre/hr
Terracare	T 98/T 200/T 320	pull	2 3/4"	1/2"-5/8"	9'3"/4'/7'	600/1,100/1,600	1 acre/hr, 1 1/2 acre/hr, 3 acre/hr
Toro	HydroJect 3000	walk	4"-20"	N/A	33"	995	up to 26,000[1]
Toro	Greens Aerater 09110	walk	3 1/2"	3/8"-1/2"-5/8"-3/4"	27"	1,275	13,000[1]
Toro	686/687/96	pull	N/A	1/2"or3/4"[3]	90"/82"/48"	1,420/1,290/600	1-10 mph
Toro	Fairway Aerator 09500	pull	3" to 5"	3/4"or7/8"	63"	2,975	61,000[1]
Verti-Drain	305-250/305-200H	pull	16"	3/4" or 1"	98"/79"	4,685/3,515	21,500[1] 17,200[1]
Verti-Drain	105-145	pull	12"	1/2"-5/8"-3/4"-1"	57"	1,850	7,800[1]
Verti-Drain	005-120	pull	10"	1/2"-5/8"-3/4"	48"	1,100	7,500[1]
Verti-Drain	001-060	walk	6"	1/2"or5/8"	24"	680	5,700[1]

[1] Square feet per hour [2] 4" spiking tine available for all models [3] 4" slicing blades available

ADD MUSCLE TO YOUR WORK FORCE, GET A BIG BOSS

The term "labor-saving device" might have been coined to apply to the Polaris Big Boss. It's your worker of choice when human hands, arms and backs aren't quite enough, but a pickup or dump truck is too much. And it's a terrific recreational vehicle as well, able to haul an entire campsite in a single trip, or supply a remote hunting cabin with food and equipment for a week. For farms, construction sites, back yards, or the back woods, a Big Boss gives you the extra strength you need to do what needs to be done.

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Warning: ATV's can be hazardous to operate. For your safety: Never carry passengers, avoid excessive speeds, and be particularly careful on difficult terrain. Polaris ATV's may not be ridden by people under 18 years of age. Polaris recommends that all ATV riders take a training course. For safety and training information, see your dealer or call Polaris at 1(800)328-9975. (In MN, 1(800)247-6670).

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Circle No. 123 on Reader Inquiry Card

SHATTER/SLICERS

Manufacturer	Model	Pull/Walk/Ride	Penetration	Overall Width	Weight (lbs.)	Speed
Aer-Way	AWO40T-1365T	pull	6 1/2"	4'	N/A	conditional
Aer-Way	AWO56S-1365T	pull	8"	5' 6"	N/A	conditional
Aer-Way	AWO60Q-2380C	pull	6 1/2"	6'	N/A	conditional
Aer-Way	AWO76S-2380T	pull	6 1/2"	7' 6"	N/A	conditional
Aer-Way	AWO80Q-2380C	pull	6 1/2"	8'	N/A	conditional
Aer-Way	AW150T-4380T	pull	6 1/2"	15'	N/A	conditional
Brinly-Hardy	SA-30 BH	pull	2"	30"	22	conditional
Brinly-Hardy	SA-36 BH	pull	2"	3'	40	conditional
Brinly-Hardy	SA-36 PR	pull	4"	3'	95	conditional
Cushman	Ryan Tracaire Model 544423	pull	4"	6'	1037	up to 10 mph
John Deere	140S	pull	N/A	41"	360	conditional
John Deere	260S	pull	N/A	5'	420	conditional
John Deere	280S	pull	N/A	82"	690	conditional
Feldmann	2200S	walk	2 1/2"	26"	128	18,000[2]
Green Care	Shattermaster SH-6/250	pull	12"	5'	725	conditional
Green Care	Shattermaster SH-8/250	pull	12"	80"	950	conditional
Hoffco	Li'l Hoe	walk	N/A	10"	25	conditional
Olathe[1]	83	pull	3 1/2"	4'	N/A	conditional
Olathe[1]	84	walk	2 1/2"	29 1/2"	350	conditional
Olathe[1]	37	pull	3"	5'	N/A	conditional

[1] Slit Seeder attachment available [2] Square feet per hour

AERATION *from page 22*

professionals must decide what system best suits their needs.

Aeration is most effective when the surface plant is actively, healthfully growing. Early aeration can lead to disruption in the grass root system.

Another important consideration: aeration plans must consider the climate. Cool-season climates, generally, favor early spring and early fall programs when the grass shows vigorous growth. Warm-season climates, as a rule of thumb, invite aeration benefits in late spring and early summer.

Aerate cool-season turf in early spring and early fall, during periods of vigorous growth.

The accompanying chart lists what is available to professional lawn/landscape maintenance contractors this fall. **LM**

WHEN YOU'VE GOT GRUB CONTROL THAT'S THIS GOOD, WHY NOT SPREAD IT AROUND?

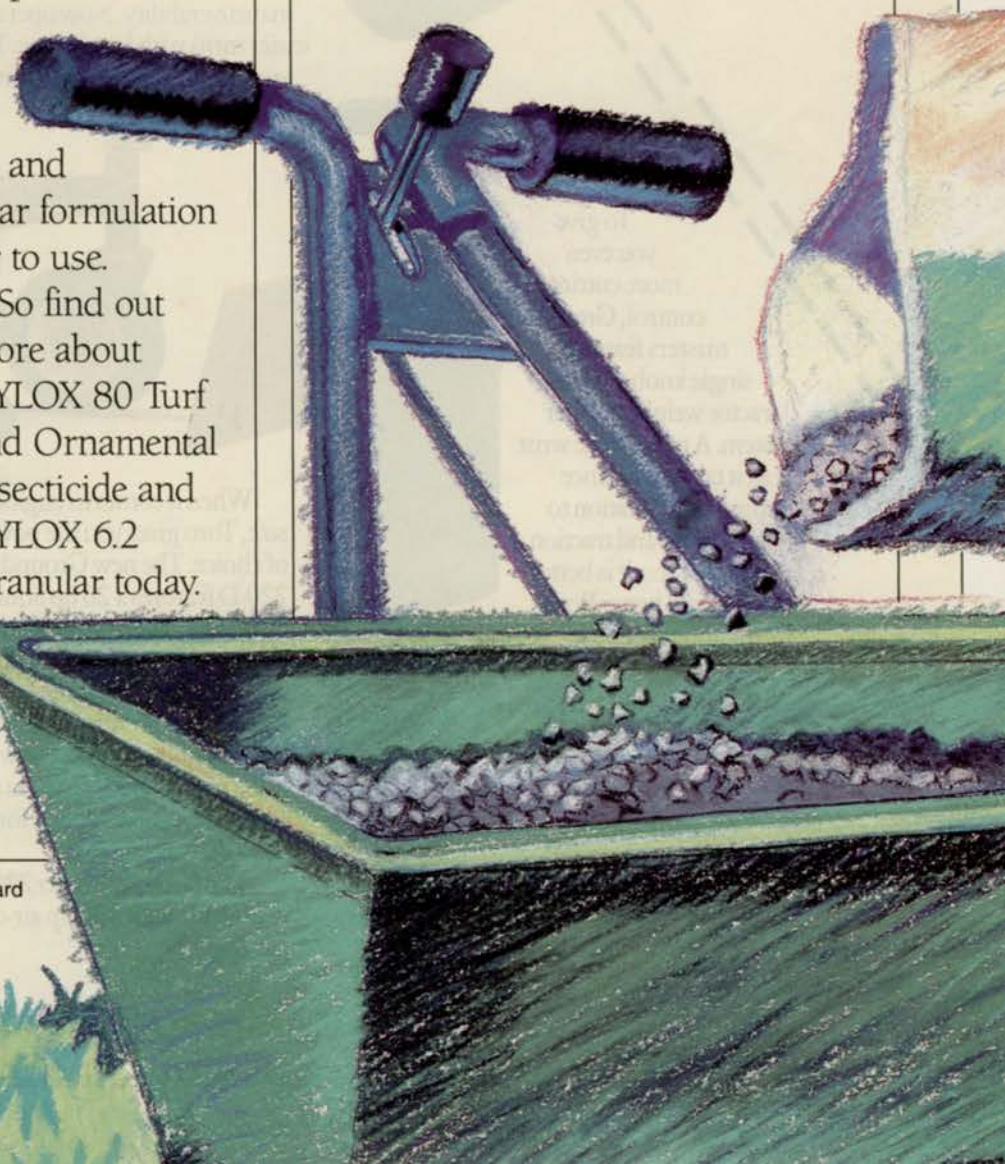
When it comes to grub control, there's nothing faster or more effective than DYLOX® Insecticide from Mobay.

Now, thanks to DYLOX 6.2 Granular Insecticide, there are two great formulations of DYLOX to tackle tough grub problems.

DYLOX gives you the fast-acting protection you've come to depend on, and now the new granular formulation makes it even easier to use.

So find out more about DYLOX 80 Turf and Ornamental Insecticide and DYLOX 6.2 Granular today.

Because the only thing faster than DYLOX at work, is the way its reputation for grub control has been spreading. Mobay Corporation, Specialty Products Group, Box 4913, Kansas City, MO 64120. (800) 842-8020.



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Mobay

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This Time, We Did Competition, We Out

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LEVELLING THOSE LOWBALLERS

In the Northeastern U.S., a 12-week season means that normal problems with lowballers are compressed and magnified. Successful landscapers still compete, though.

by Terry McIver, managing editor

"Little things mean a lot." "The whole nine yards." "Bang for the buck." You hear those expressions a lot when you visit Levinsky's Landscaping in Colchester, Vt.

Peter, Jonathan and Mark Levinsky, ages 40, 35 and 32, respectively, combine their individual drive and business sense to power a 12-man company that sells landscaping, mowing, chemical application, and snow plowing services. They're dedication and work ethic is plain to see, which explains why they're still a success after eight years in business.

But success doesn't come easy, because of two factors they find most challenging: a relatively short season, and price-cutting competitors.

The eastern United States is a challenging area for anyone in the lawn care or landscape business. A hundred miles can chop two or three weeks off the season, so time is a great motivator. You can't sit still. You need men who feel the same way you do about success.

"We figure we have 12 weeks, from Memorial Day to Labor Day," Peter Levinsky, estimates. "If we don't have a run of good weather between May and July 4th, it's an awfully short season."

People who work for nothing

Remember Mr. Haney, the nasal-voiced huckster on "Green Acres"? He had a business for every day of the week, advertised on a window shade on the side of his wheezing old pick-up. The Levinskys, and other reputable landscaping/lawn care companies in the Colchester area, often have to contend with that kind of competition. One "landscaper" they have seen posts a chalkboard on the side of his truck. One day he's a landscaper, the next day he's a painter. The only difference is that Mr. Haney was a price gouger; these guys are undercutters extraordinaire.

The glut of lowball contractors thus compounds the hassles in the race to make money during a 12-week season, and the Levinskys can relate endless stories about the constant assault to the image of the professional landscaper.

The Levinsky brothers (from left, Jon, Mark and Peter) believe that, in time, most lowballers will leave the green industry because of financial failure.

There's the story of the lowballer who beat them out of a mowing contract for a chain of McDonald's restaurants. One evening at 9 p.m., Peter spotted the crew at one of the restaurants, cutting grass in a driving rainstorm.

What's in question is not a person's right to a decent living. The trouble is, "instant landscapers" apparently don't know the first thing about professionalism, and don't want to learn.

Poor quality shows up later

Though the Levinskys do well, they have a hard time convincing customers or prospects that less is not always better when it comes to price. Poor quality work is always an intangible before the fact.

Then there are the annual battles with condominium managers who will award contracts to the lowest bidder, regardless of quality, reputation, or whether or not the company carries workmen's compensation.

"The important thing for condominium boards to remember," says Peter, "is that when you're dealing with a landscaper, make long range plans, monthly or seasonal. And don't shop strictly for price." The brothers lost one condominium bid because the manager "wanted to see if the lowballer could handle the job."

"Then," Peter recalls, "condo managers look back in their books and say, 'we were billed for all this work that was never done. The Levinskys say they can do it the right way.' Why didn't they call us two or three years ago?"

Peter says some condominium directors prefer winter cut hemlock mulch, with its bright red color. That red color is most vibrant in March, but the directors won't sign contracts until April. "People on the boards procrastinate. They don't realize that you've got to be on top of this."

Jon asks: "Why should we go out and buy 100 yards of winter cut hemlock for $1250, dump it in their lot, and then see them sign with someone else because they're 10 cents cheaper? Then we have to remove it."

Lowball competition has succeeded in moving the company away from residential cutting. They simply can't compete on volume with the nickel and dime outfits. They maintain their commercial landscaping and condominium maintenance clientele, which includes grasscutting at IBM's corporate headquarters. Other competition, though fair-and-square, is simply too well-established to compete against. "We're competing with people who have nurseries, and have paid for them a thousand times over," says Peter. So

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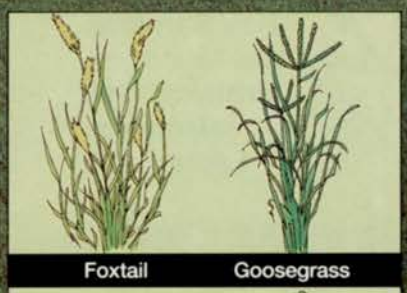

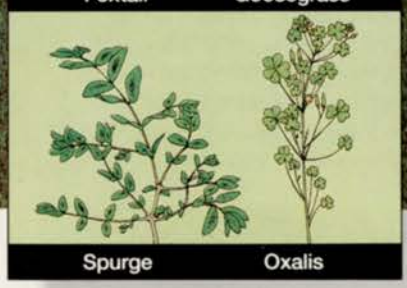

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David Hanus
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"Dimension works very well for me on crabgrass, mainly because it is flexible. The wider window allows us to visit a customer in March or April with a one-time application and get lasting control. Having that flexibility is a big benefit."

Mike Kowalchuk
Owner
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Randy Zweifel
President and Owner
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"We used Dimension on lawns with crabgrass in the two- and three-leaf stages and were very pleased with the results. The one application eliminated the existing plants while keeping the new ones from emerging. It's nice to have the option of applying a product with both preemergent and postemergent activity."

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the plan is to lay low.

"During (recession)," says Peter, "instead of experimenting, and expanding into areas that compete with established businesses, we're better off identifying what our particular niche or niches are, and developing them to the highest degree."

Getting together

It's time to talk. "We feel that a real failing in our profession up here is that we don't get together as a group in the off-season," says Peter, who would like to see more discussion among competitors. "A little talk could go a long way. Sit down and discuss pricing. I think people should bare their souls a little bit. If somebody is sitting there who is (pricing) so ridiculously low, some of us should be able to ask: how do you come up with your prices? What's your goal? Where do you want to take your business?

"I'm partially to blame for not taking it to the next step and doing something about it. Now, during the '90s, I'm going to have to. Nobody wants to get together and say, 'this is what our rate should be.' A lot of companies will chase 1000 accounts for $10 each, because it's impressive to say, 'I do 1000 accounts.'"

Other ways to beat the competition

1. If you plow, make it pay.

Snow plowing shouldn't come cheap. "The man in the truck is worth over $100 an hour," Peter asserts. "There's liability, wear and tear on the truck, the driver, I may have to come back a second time and clean up something I missed. You don't go out and plow for $10 or $15."

Oil is changed on all trucks after every big plowing run. Peter says he wonders if people realize how many miles are put on a truck in reverse during snow plowing season. "Then there's the equipment and maintenance: sanders, cutting edges, hydraulics; changing the plows when it's 10 degrees below zero, and we have to bring torches out to loosen the fittings. Changing a flat in 18 inches of snow at 3 a.m."

Which is why landscapers are exasperated when people want work done for nothing. "We read *Condo* magazine," says Peter, "and a writer says to condominium boards, 'play one landscaping group against the other.' You can't be in this business and do the snowplowing for nothing."

2. Be environmentally diplomatic.

Vermont has its share of rules and regulations on pesticide use, and is active in the environmental movement.

Knowing that an overly defensive posture can hurt a company's image, the Levinskys have a "live and let live" philosophy. "We're going to have to accommodate a certain percentage of the population," says Peter. "We're not going to win (environmentalists) over to our camp. Personally, I have no problem with them and I feel I can accommodate them. From a professional standpoint, we have to present an image that we appreciate where they are coming from. If somebody can show us a better way; if there is a safer way, less toxic, less harmful, more environmentally friendly, we're willing and capable of incorporating it into our business.

"We don't have a problem with the people who are against herbicides and pesticides," adds Jonathan. "It's just that we're the ones that have to deal with the people when their lawns are full of crabgrass, chinch bugs and sod webworms. Then what are we supposed to say to (customers)?"

But the procrastination so characteristic of anything legislative can go only so far. Then, it's time to get to work, and negotiate later.

"A lot of the people on boards of condominium associations take an active interest, they will listen to the pros and cons (of pesticide use)," says Jon. "But as the lawns become more visibly effected, there is a clamor for action. They say, 'enough talk; let's continue the program until something better comes along. Until there is a more effective or safer way of doing things.'" **LM**

Bigger jobs can bump lowballers

Robby Mazza, president of All Seasons Landscaping, Colchester, Vt., also sees his share of price-cutting.

He recently put in a bid of $6500 for a grounds facelift at a low-income housing project. He estimated the work would require five or six men and take five days to complete. The job went to a competitor for $2500, which Mazza calls "totally impossible; it can't be done."

How does it happen, these shamelessly low bids? Mazza believes there are a number of factors: "People pay under the table, there's no workmen's compensation, no one pays liability insurance, there's no payroll tax. (Customers) don't ask for proof of insurance."

In business for five years, All Seasons' specialties include landscape design/build, snow plowing, material hauling, excavating and land clearing.

Mazza's background includes experience in earthmoving, which makes him feel right at home around the big equipment. His inventory includes two bucket loaders; a bulldozer; 16 trucks; a Bob-Cat skid-steer; turf aerators; a parking lot sweeper; International dump trucks; and John Deere, Toro, Ransomes and Gravely mowers.

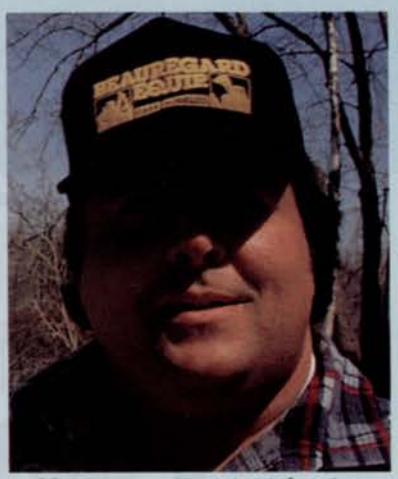
Heavy work provides an extra advantage: more time to work. "You can work later in the fall," Mazza explains. "If you're ever going to have anything, you're going to have to be able to work year-round.

"In the winter time, there are too many guys who can buy a pick-up truck with a snow plow and do driveways for $25. When you start moving up into the heavier work, the overhead (between companies doing the heavy work) is pretty much the same, so you don't see a lot of cutthroat stuff."

Mazza never burns bridges, and he never forgets how he started. "Sometimes, when we're doing the big work," he says, "I get calls for small jobs. But I remember when we had the one pick-up truck. That's what got us here."

All Seasons sells topsoil and mulch—two popular items—to walk-in customers. It's a great way to advertise.

—Terry McIver □



Robby Mazza: Heavier jobs give a company more time to work.

The importance of timing: fertilizing less than 30 days before a frost will result in low temperature kill, left, and spring dead spot, right.

LATE-SEASON FERTILIZATION

Objectives of proper fertilization include year-round turf production, adequate vegetative growth and quality shoot growth.

by L.B. McCarty, Ph.D., University of Florida, Gainesville

Late-season fertilization helps maintain turf color and density longer. Improved turf density promotes a more competitive turf that can better crowd out weeds, and helps turf recover from summer heat or pest damage.

Fall fertilization was not previously widely used due to the concern that excessive shoot growth would deplete root carbohydrate reserves and reduce the turf's cold tolerance. New research suggests an opposite trend—if appropriately timed and moderate nitrogen amounts are used. The ratio of nitrogen to other nutrients such as phosphorus and potassium also influences root growth and temperature tolerance.

Spring green-up

Proper late-season fertilization also provides spring turf recovery by promoting earlier spring color, increasing turf density, and improving turf appearance. Less follow-up spring fertilization is required since the fall-fertilized turf has a more desirable appearance following winter. In many instances, proper late-season fertilization also increases the plant's ability to withstand heat and droughty conditions the following summer.

Cool-season turf needs

Maximum fall fertilization effects are obtained with the cool-season turfgrasses grown in the transition zone.

Add the majority (approximately 80 to 90 percent) of the total annual nitrogen applied during fall and winter months. Reasons for this are related to the temperatures that affect turf growth. Cool-season grasses have optimum top growth when temperatures are in the middle 70s to low 80s and optimum root growth when soil temperatures are in the high 50s.

The amount of sunlight plants receive is also important. In fall, days

become shorter, light intensity becomes brighter, and night temperatures become cooler. These three variables, when combined, encourage production of storage carbohydrates that accumulate in the roots and discourage production of leaf tissue. These stored carbohydrates provide the energy for new top growth in early spring and reproductive (seedhead) tissue in late spring. Adequate fall root carbohydrate production also enables plants to withstand winter temperatures and, surprisingly enough, provides much of the vigor and warm temperature stress resistance the following summer. Research indicates that if fall root carbohydrates are not present in adequate quantities, long-term damage due to these reasons can be expected.

Warm-season grasses

Benefits of late fall fertilization of warm-season turfgrasses are less understood than with cool-season grasses. Growth of warm-season grasses start to decline once temperatures drop below 78 degrees.

General fertilization of non-overseeded warm-season grasses usually consists of applying 10 to 20 percent of the total annual amount of nitrogen during the fall months. This amount promotes desirable turf density and better recuperative ability in spring without sacrificing cold tolerance. A balance must be made between retaining desirable green color in warm-season grasses as late as possible without over-stimulating succulent grass growth which is more susceptible to low temperature damage.

The importance of timing

In general, cool-season grasses should be fertilized between mid-October and mid-November in northern areas of the transition zone and between mid-November and mid-December in southern areas of the transition zone. Late fall fertilization needs to be supported with early fall fertilization to provide adequate green tissue for the second application.

Warm-season turfgrasses such as bermudagrass and zoysiagrass should be fertilized no later than 30 days prior to the first anticipated frost. Fertilizing closer than 30 days to this frost date, especially with heavy nitrogen rates, results in succulent shoot growth at the expense of root growth. If such is the case, the plant is generally much more susceptible to problems such as direct low temperature kill and spring dead spot.

Warm-season grasses to be overseeded should not be fertilized for at least 30 days prior to overseeding. Fertilizing warm-season turf to be overseeded closer than 30 days to the first anticipated frost also encourages excessive turf growth that does not allow good ryegrass germination and establishment. Once the overseeded grasses germinate, at least two weeks should elapse before fertilizing. Do not exceed 0.5 pound of actual nitrogen per 1000 square feet until the warm-season grass goes completely dormant.

Rates and ratios

Research indicates that excessive nitrogen use in late fall contributes to problems previously mentioned. It has also been demonstrated that the relationship of nitrogen to phosphorus and potassium will influence these problems. Late fall fertilization should not exceed 1 lb. of actual nitrogen per 1000 square feet per application. This is especially true when quickly-available nitrogen sources are used. In this case, a split application of 1½ lb. actual nitrogen per 1000 square feet may be more beneficial than the single full rate.

A 1:1, or even better, a 1:2 ratio of nitrogen to potassium has consistently been demonstrated as the optimum. Excessive phosphorus at this time neutralizes the beneficial effects of the potassium and nitrogen resulting in less cold hardy plants. This is especially true for St. Augustinegrass. Therefore, late-season phosphorus applications are recommended only if soil test results indicate a deficiency. In addition, research suggests that a 4-1-6 ratio fertilizer is most desirable for late fall fertilization of bermudagrass. A 1-0-1 or 1-0-2 (such as a 15-0-15 or 15-0-30) ratio fertilizer has been successfully used on other warm-season as well as cool-season turfgrasses.

Other N sources

Nitrogen sources dependent on soil microbes to release nutrients are less effective for late fall fertilization since temperatures are not high enough for microbial activity. Soluble sources such as ammonium nitrate or ammonium sulfate and certain slow-release fertilizer sources such as IBDU are not temperature dependent, thus are able to release the nitrogen easier during late fall. If other nitrogen sources are chosen, use finer or microprilled grade fertilizer forms.

Iron applied in late fall often provides desirable green color and can favorably influence turf tolerance to cold temperatures. Benefits of iron applications are usually seen in soils with high pH (>7.0), high available phosphorus, or when turf rooting is restricted. One to two ounces of an iron source such as ferrous sulfate in one gallon of water is normally applied per 1000 square feet of turf. Chelated iron sources also are used.

The prime nutrients

Nitrogen is generally the most important turf nutrient. It is a major constituent of plant proteins and is vital for chlorophyll production. Most naturally-occurring nitrogen in turf soils is released in inadequate amounts for turf needs. In addition, this nitrogen is in a soluble form enabling it to move below the turfgrass rootzone out of the plants' reach.

Turf managers must constantly add some nitrogen on highly maintained turf, especially when clippings are routinely removed.

Phosphorus is a building block in photosynthesis and in the formation of necessary proteins. It is also involved in a complex carbohydrate transport system which moves energy to all parts of the plant for vital growth processes.

Phosphorus availability is highly dependent on the soil pH, with the range of 6.2 to 7.0 being optimum. Most sandy soils are inherently low in available phosphorus. A difficulty when dealing with phosphorus fertilization is its lack of mobility into the rootzone.

Potassium is essential in the transport of carbohydrates. It serves as a catalyst in numerous plant processes, and promotes sturdier plants with increased stress tolerance. Available soil potassium is held on the surface of clay and organic matter particles. It is less affected by soil acidity than either phosphorus or nitrogen. Almost as much potassium is needed for optimum turf health as nitrogen. High organic soils such as mucks and peats as well as sandy soils are typically low in potassium.

—Dr. McCarty □

'Bridge products' for late-season fertilization

Two concerns often voiced by landscapers and lawn care companies regarding late-season fertilization are:

- higher precipitation and decreasing nutrient uptake by the plant during this time of year create a potential for leaching and run-off of soluble fertilizers; and
- soil micro-organisms and macro-organisms don't react well to harsh chemical changes in their environment, so heavy doses of soluble salts in the soil can have detrimental effects.

Landscape professionals might respond to these concerns by using chemicals more judiciously and by exploring alternative products and technologies.

Until recently, landscape professionals had to choose between synthetic fertilizers and natural (organic) products, each with its own set of strengths and weaknesses. But a new category of fertilizers called "bridge products" combine organic material with a moderation of environmentally-safe synthetic ingredients. They have all the safety and benefits of natural fertilizers without sacrificing the high nitrogen and lower cost of synthetics.

Bridge products are an advantageous choice for late-season fertilization. In addition to providing nutrition for the plant, fall fertilization benefits soil life: bacteria, protozoa, nematodes, earthworms, insects, fungi and algae.

Bridge products provide a combination of water insoluble nitrogen (WIN), quick-release nitrogen and organic material to create the optimum soil condition for fall and winter. The quick-release nitrogen in bridge products is available to the plant immediately, regardless of temperature. Yet the amount of quick-release nitrogen is balanced with slowly-available organic sources in order to minimize waste or leaching.

The long-term benefits of bridge products lie in the slow release, water insoluble nitrogen. WIN breaks down gradually through microbial activity and thus will not leach excessive nitrogen. If temperatures fall below those required for organic breakdown, unused WIN is stored in the soil until microbial activity resumes in the spring.

Results of late-season fertilization can be observed in the head start it gives in spring. The stores of nitrogen and other essential nutrients enhance root growth and promote early spring green-up.

Bridge fertilizers are made from materials that enhance macro- and micro-organisms in the soil, each of which plays a synergistic role in plant life functions. For example, the earthworm—probably the single most important macro-organism in soil—keeps the soil aerated and creates channels for water distribution and root growth. Bacteria and fungi are also necessary to maintain balance in the dynamic soil environment.

Bridge products work well with IPM, a system that allows for reduced and more efficient usage of pesticides and other chemical products. Through agronomic practices—such as judicious use of chemical treatments and close monitoring of turf—IPM promotes healthy, fertile soil. By promoting a balanced soil and turf environment, bridge products can reduce the need for more frequent application of ecologically harmful chemicals to control insects and weeds.

Beneficial nematodes, bacteria and fungi help keep their turf-damaging close cousins in check. Soil micro-organisms also break down organic and mineral materials in the soil, making them available to nourish plants. Keeping this dynamic environment in balance is the secret to successful, economical turf management.

A two-year study by Dr. Charles Peacock, associate professor of crop science at North Carolina State University, found that bridge products are effective fertilizers. Organic materials used as fertilizer bases provide an energy source for soil micro-organisms, enabling them to continue their soil-building activity; this in turn provides optimum conditions for plant growth.

—J. Mark Nuzum □

J. Mark Nuzum is president of Harmony Products, Chesapeake, Va., a leader in developing bridge products. Formerly a division of Nitrex, Harmony was formed in January 1989 to research, develop and market environmentally sound products for professional and consumer use.

Iron application is preferred for providing late fall green color for warm-season grasses such as centipedegrass, bahiagrass, and St. Augustinegrass.

Consider the species

Not all turf species should be fertilized late in fall due to excessive damage that often occurs during the winter.

Centipedegrass and bahiagrass should not only be fertilized earlier in the season; annual nitrogen rate should be minimum for both turf species. Problems such as centipedegrass decline have consistently been associated with heavy annual nitrogen use and late fall nitrogen fertilization. Potassium fertilization of these species is, however, recommended in fall to promote rooting and cold hardiness. One to two pounds of potassium should be applied 30 to 45 days prior to the first killing frost.

As mentioned above, iron applications to centipedegrass and bahiagrass often provide the desirable green color without resulting in undesirable effects.

A light fertilization of St. Augustinegrass may be applied in early- to mid-fall but is not recommended in late fall. No more than 1½ lbs. actual nitrogen should be applied at this time. St. Augustinegrass has less natural temperature tolerance than most other warm-season grasses, therefore, is not normally grown where temperatures fall consistently into the teens. Iron application to St. Augustinegrass also often provides desirable green color without undesirable effects. **LM**

Dr. McCarty is an assistant professor of turfgrass science at the University of Florida, Gainesville.

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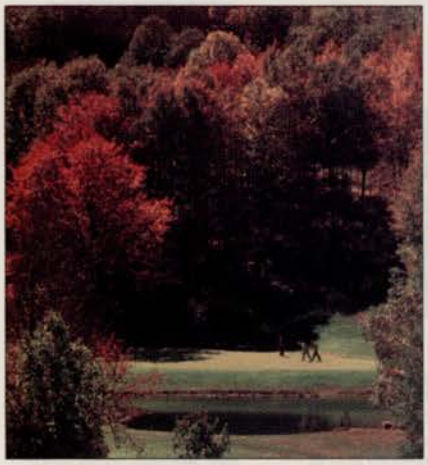

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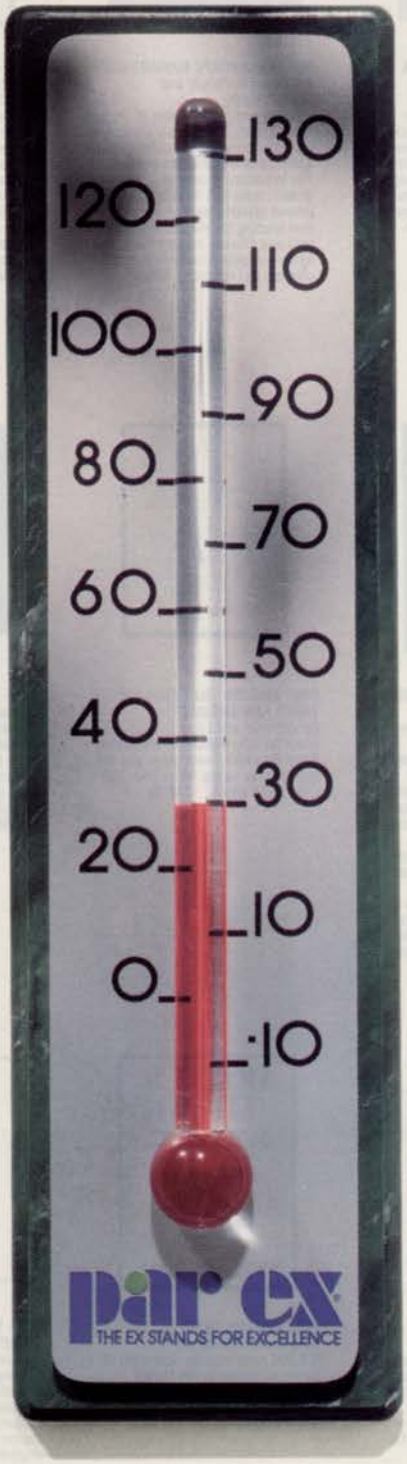

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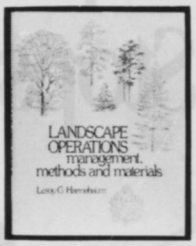

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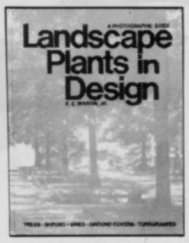

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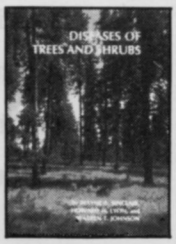

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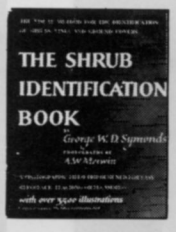

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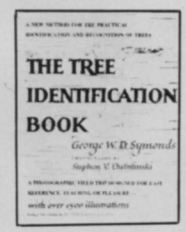

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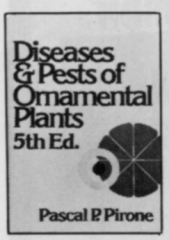

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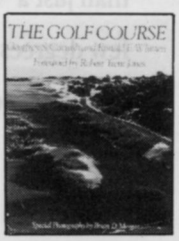

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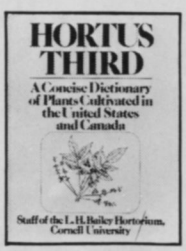
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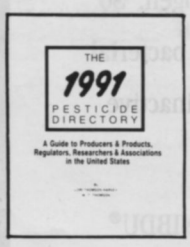

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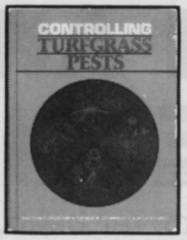

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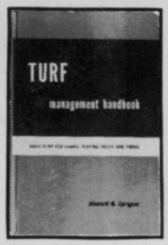

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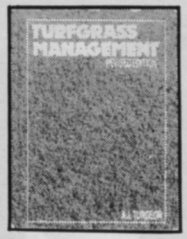

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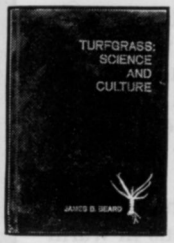

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SUPERS IN WARM-SEASON AREAS BEWARE!

Bentgrass establishment in warm regions has never been, and probably never will be, easy. No matter how many golfers ask for it.

by Jack Simonds, contributing editor

Let the golf course superintendent beware: bentgrass—the "Cadillac" of greens turf by many measures—is not, and may never be, adapted for climates south of the Mason-Dixon line.

The species—commonly, comfortably nurtured in the East, Midwest and other temperate climes—can be grown and maintained in Dixie, Southwest and Western settings, but not without a lot of daily handholding. All who spoke with LANDSCAPE MANAGEMENT agree that the decision to establish bentgrass greens in warm climates must be carefully considered. Also generally agreed: increasingly, golfers are asking for bentgrass greens over bermudagrass.

Opinions are not hard to unearth:

- Mississippi State University agronomy professor Dr. Jeffrey V. Krans: "It's like taking a fair-haired person, putting him in the desert and expecting him not to get sunburned. It just doesn't work."
- Golf Course Superintendents Association of America president Stephen Cadenelli: "You try to locate the proper plant in the proper place. It (bentgrass down South) can be very difficult to deal with. It may be too difficult to maintain and can put a stress on everyone."
- Superintendent Jerry Lemons of Old Hickory Country Club in Hermitage, Tenn.: "From Memorial Day to Labor Day, it is 90 days of hell. You try your best to keep every bit of grass you've got alive. Sometimes it is impossible."
- Ray Hansen, president of the Florida Golf Course Superintendents Association: "The solution to this question is to educate (Florida) course members that green isn't always beautiful. Golf courses over the years have become so beautiful that the question becomes: Where do we go from here?"
- University of Florida environ-

Bentgrass in warm climates? Here's what they say:

Jeffrey Krans: "It just doesn't work."

Dr. A.E. Dudeck: Year-round bentgrass "environmentally unsound."

Stephen Cadenelli: "It may be too difficult to maintain."

Ray Hansen: Educate club members: "Green is not always beautiful."

Jerry Lemons: "Sometimes it is impossible." *Photo by Larry Kassell.*

Jim Simmons: "The secret is to keep it growing constantly." *Photo by Steve Alvis.*

mental horticulture professor Dr. A.E. Dudeck: "Environmentally, I see it (a year-round bentgrass green) as unsound. (But) it is the Cadillac of putting surfaces and people seem to want it here."

A sensitive species

Bentgrass, coveted for its fast putting speed and fine, rolling texture, is also among the most sensitive species; responding both positively and negatively to fertilizers, pesticides, herbicides and fungicides—all necessary "toolbox" items in a warmer climate.

BENT AND BERMUDA, THE BASICS

Bentgrass:	Cold tolerance: Good to excellent Ideal growing conditions: 60-75 degrees F. More susceptible to disease in warmer climates
Bermudagrass:	Heat hardiness: Excellent Low temperature hardiness: Poor Drought resistance: Excellent Salt tolerance: Good Wear tolerance Very good
Pest susceptibility:	Sod webworms, armyworms, mole crickets, bermudagrass mite, fruit fly

A warning against bentgrass greens by the IFAS

Year-round bentgrass greens in the Sunshine State pose difficulties and make the practice difficult, says a June, 1990 report from the Institute of Food and Agricultural Sciences, part of the Cooperative Extension Service at the University of Florida.

Researchers conclude in the four-page report that the institute "does not recommend the use of bentgrass as a year-round putting surface in this state." The recommendation comes after reviewing the species' reliance on precise water requirements as well as dependence on weed, disease, nematode and insect controls and other quality control concerns.

"Bentgrass in Florida, Some Important Considerations" combines the work of the Institute's L.B. McCarty, J.L. Cisar, A.E. Dudeck, T.E. Freeman, G.W. Simone and R.A. Dunn who collectively summarize that bentgrass in Florida "should be considered only as a temporary turf suitable for winter overseeding play."

The research team details that bentgrass grows best in air temperatures between 60 and 75 degrees and soil temperatures between 50 and 65. Many areas of Florida exceed these ranges and although direct-kill temperatures rarely are the isolated cause for failure, elevated temperatures do contribute to the plant's lowered capacity for photosynthesis, leading to diminished root development.

"While direct-kill soil temperatures are rarely achieved or maintained for long periods of time, soil temperatures above optimal for bentgrass does not efficiently produce carbohydrates by photosynthesis," states the report, adding carbohydrate reserves become depleted and root growth declines.

Other cautionary notes:

- Exact water management—including application amounts and proper drainage—to deter wet wilt and algae layer growth is "the most important key to quality bentgrass production."
- 4 to 8 lbs. of slow-release nitrogen is recommended per 1,000 sq. ft.
- Iron is needed for color.
- Potassium and phosphorus levels are also important.
- Soil pH levels should hover between 5.5 and 6.5.

Bentgrass has a relatively low tolerance to most post-emergence herbicides, the report states, although pre-emergence products can be effective. When weeds strike, say researchers, hand removal is the only effective method once the turf has been established. Also, broadleaf herbicides can be used at half strength, but only at temperatures below 80 degrees.

Bentgrass is also more susceptible to disease in warmer climates because of its weakened condition in summer heat. Common fungi diseases for bentgrass include dollar spot, brown patch, helminthosporium, Southern blight (sclerotium), fairy wings and pythium.

Other difficulties cited in the report include nematodes, insect infestation, heat build-up, compaction, bermudagrass encroachment and traffic control.

If successfully established and maintained, bentgrass greens in warm climates can be chalked up as a status coup. Success singles out a course from others in the vicinity still with coarser, "slower," more yellow bermudagrass greens.

"But there have been as many failures as there have been people who have been able to pull it off. When you make that decision to go to bentgrass, you have made a serious commitment of time," warns Krans.

Ask Jim Simmons, superintendent at Shoal Creek Golf Course in Shoal Creek, Ala.

Twice the site of the PGA Championship (1984, 1990), the 18-hole Jack Nicklaus course has had Penncross bentgrass greens since 1980, although "the grass just didn't perform" in its first year, according to Simmons.

"The most important thing is to keep that grass growing constantly. If it just sits there, it will slowly fade out over the summer," says Simmons. Krans says Simmons is one superintendent who has consistently come up with formulas for success.

The course, which will expand to 27 holes in November, originally installed bentgrass under direct orders from Nicklaus. Although initially cautioned that bentgrass doesn't grow in the South, designers proceeded with the species, Simmons says, because Nicklaus insisted on only the best greens.

Fertilizer regimen essential

Soluble fertilizers are routinely applied, as is a fungicide, Simmons says. Routine supplements of iron and potassium have augmented the stay-green program as well.

"Those are the biggest things that helped our greens," says Simmons. His 17-member crew also overseeds greens every other year.

"When I first came down here, our

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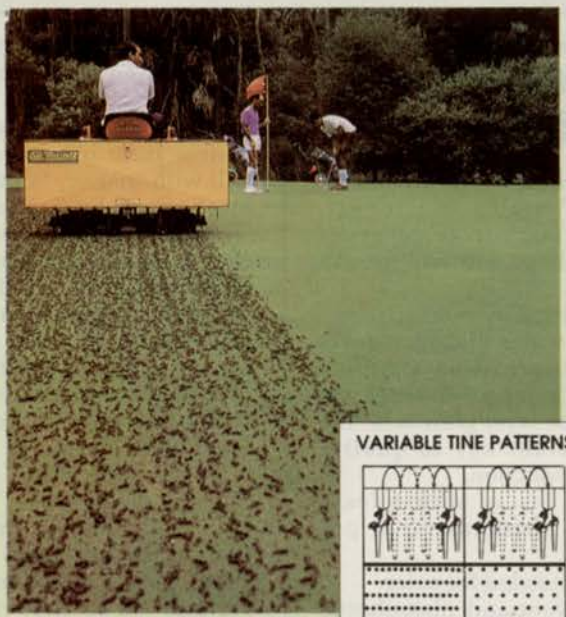
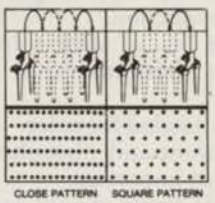
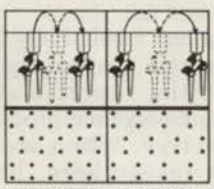


VARIABLE TINE PATTERNS





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idea to grow the bentgrass was to not fertilize it; to let it lay dormant and not do anything except maybe use some iron. Well, that didn't work. The grass just didn't perform (and) it became obvious we had to do something to keep grass growing year-round."

The greens also receive a fine fog-like misting on particularly hot days at around 10 a.m. and noon. The syringing technique is accomplished with smaller irrigation heads.

One other ingredient: commercial-styled fans trained over greens to keep a constant air flow, reducing the ravaging effects of 95 degree temperatures and 60 to 70 percent humidity. Dr. Dudeck says hot, stagnant air is equally harmful to bentgrass, and applying moving air currents may be equally important at night. Soil temperatures, coincidentally, which reach and maintain 80 degrees can severely affect bentgrass sod. Ornamentals surrounding greens can contribute to heat build-up.

Keep it going, remain on alert, spot for trouble...all recurring messages from those who have succeeded with bentgrass in warmer months in warmer climates.

'Every green, every day'

Lemons, during Nashville's peak golf season, wrestles regularly with high temperatures, high humidity and heavy rainfall.

"The key is daily management. It is not just a matter of checking greens out once a week. You check out every green every day," notes Lemons.

He "waters the dickens" out of the greens, sometimes by hand. He also uses wetting agents. Aerification is performed in stress times, sometimes as late as August. He says he does not overseed nor is artificial air movement needed in his circumstance.

Cadenelli says the GCSAA does not take a formal position on the practice, preferring to support the USGA's continuing research with grasses requiring less water, nutrient supplements and pest and infestation controls.

Hansen says few of the Florida GCSA's 740 member superintendents keep year-long bentgrass greens; with 95 percent opting for an adapted Tifdwarf and other heat-tolerant varieties. Winter overseeding with bentgrass is practiced, but the association president says anticipated water restrictions, along with restrictions on fungicides and pesticides, could make the choice for bentgrass moot in future seasons. **LM**

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MANAGING STRESS

Job stress is one of the banes of being a manager. But there are ways to relieve the day-to-day stress the job causes. Here are some suggestions.

by Rudd McGary, Ph.D.

The caveman comes upon a saber-tooth tiger. He has two choices to reduce the immediate threat and accompanying stress: he can fight or he can run. Most of the time the caveman runs. He reduces his stress immediately and in a physical manner.

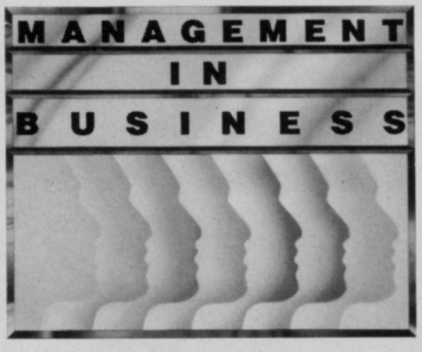
Wouldn't it be nice if, in the modern world, dealing with stress was as simple as that? But it's not. Let's show two examples of stress in the real world.

1. *You are required to install some major landscaping at a golf course. It took you almost a year to land the job and a long time to plan out your materials, equipment and vehicles. You have them all ready to go on the start date. The entire crew shows up, on time. On the way to the site, your trailer loaded with the heavy equipment gets stuck on the railroad tracks and is hit by a train. You can't run and you can't fight. It's stress time.*

2. *In your other division, you find that a certain client—as a matter of fact, the single most important client you have—isn't happy about some construction you have done on his property. You agree to a walk-through with him. You find the staircase off his deck actually leads straight to a cesspool cover. You ask the foreman later what happened, and he replies, "That's what the architect said he wanted." You can't run and you can't fight. It's stress time.*

The difference between these two examples lies in the control that you have over both. In the first illustration, having a train run over a piece of equipment isn't within your control. Sometimes things happen. But in the second illustration, communication with the production department is something you can manage.

Many green industry managers cause stress for the people who work with them because they fail either to plan, or to write down what is expected at a job site. While it isn't always possible to get everything



perfect on a drawing, the better companies seem to do it most of the time.

From the planning standpoint, you must know what is going to be needed on a given job. You also need to know if the same piece of equipment is going to be needed on two sites around the same time and plan for that ahead. I'm aware that it isn't always possible to foresee every future need. But, surprisingly, managers at better companies seem to be able to.

The key to planning, and to helping lower the stress level, is to go through contingency planning.

Remember the first time a truck broke down when it was needed on a job? Everyone ran around for a while and then decided what to do. Now you know how to deal with this type of emergency so that you can take faster action. Your stress is relieved somewhat by the fact that you know what to do. That is contingency management. Most companies learn it as they go. Some actually learn to plan for it, and that can help reduce stress.

Unfortunately, even the most brilliant planning isn't going to help if an unforeseen accident occurs: someone gets sick, a piece of equipment isn't shipped to you from the dealer on time. Different things can happen that will stress you. What can you do to help manage stress with these things that occur in every company?

Here are some general rules to follow to alleviate that type of stress:

1. Recognize when stress sets in. Usually, changes in patterns of communication occur. You start seeing more errors of judgement and errors in performance. Be aware of these changes and when they occur, as difficult as it may be, take some time for yourself and reduce your stess. It sounds simple, and it is. Doing it is the trick part.

2. Find your own personal way of reducing stress. It might be exercising, or reading, or praying, or meditating, or talking with a confidante. What works for you?

3. Don't do something that will stress you further. For instance, having a beer or two may help reduce stress—but drinking too much will hurt you physically. The next day, you'll feel worse. Another example would be to work out so hard that you actually injure yourself. This will add to the stress. So know the limits of your stress reduction mechanisms. Don't overdo them.

4. Understand the difference between work and recreation. Sometimes people believe that simply doing physical work will relieve stress. But if the physical work is what you do for a living, it's unlikely that it'll help. For instance, taking a push mower and doing one more lawn isn't likely to reduce much stress, although it's a physical activity. You must change the pattern of the physical workout to something that is recreational.

5. Find time to do it. If you say that you're going to take some time off and go fishing, do it. Talking about it won't get you relief. Most of the time, it's possible to take some time off: the manager who is certain that he is the only one who can do the job is going to crash and burn sooner or later. He'll be short with his people, probably make a few more errors than normal, and generally not be a very good manager. Sure, it's often hard to find time, but being under constant stress isn't macho, it's stupid, and it hurts both yourself and the company. **LM**

Rudd McGary is a green industry consultant with AGMA, Inc., Columbus, Ohio.

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Circle No. 107 on Reader Inquiry Card

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Circle No. 124 on Reader Inquiry Card

ORGANIZING SELF-SUFFICIENT CREWS

Front line people need to be empowered to respond to changes in our businesses. Highly productive, on-site crews can work to a higher standard than ever before.

By Phil Christian

If all, or part of your business includes delivering services to the exterior of existing residential or commercial real estate, then you and your company are subject to the natural laws we call "The Nature of the Business.

The "Natural Laws:"

1. We must deliver our service to the property because the customer does not have the option of bringing the property to us.

2. One or more of our people form a mobile crew to bring the material, equipment and technical skills to the customer's property to perform the services.

3. The service is mostly intangible and varies with each delivery.

4. The outside environment can not be controlled by us. It is ever-changing and often unpredictable.

5. The needs, moods, and focus of the customer are subject to change—without notice.

Most landscape owners and managers gained their experience in companies that had a headquarters, a base, with on-site support systems: information and communication systems; access to tools and equipment, materials; and training.

Today we manage mobile crews that by "the nature of the business" do not enjoy those support systems. We try to extend this support system to the mobile crews and are frustrated because it simply does not work.

We try in vain to supply supervision by meeting with the crews on-site, bringing information, instructions and directions. We even coddle the customer and do a little training while we are there! We then rush to catch up with the next crew, reminding the dependent crew to "call us on the radio if you need support."

Quick-Read
• We try in vain to extend headquarters support to on-site crews.
• We must structure crews to face the needs of the business.
• Crew chiefs must be able to work on-site with little supervision.
• Wean crews from middle management interference and watch them soar!

No long-distance

The fact is, you can not supervise or support mobile crews long distance. They must be self-sufficient, self-sustaining, temporarily self-contained, self-motivated and—above all—self-supervised. That is a lot to ask of hourly or minimum wage people.

We must re-define the role of the mobile crew and structure them to face the needs dictated by the "nature of the business."

The solution is to have a trained and experienced crew chief or crew leader that can provide the needed support for a limited amount of time, perhaps one working day. The knowledge, experience, and skills that now exist in middle management must be rolled down to the front line on-site people.

The benefits, which can be enormous, will include:

- Increased productivity and profit
- Increased customer and employee retention
- Increased quality
- Reduced management hassles
- More efficient use of overhead

The solution

The solution to this problem is not easy: *hire, train, equip, direct, and empower competent crew chiefs who can produce the work on site with minimum or no supervision.*

This seems too simple. If the benefits are so great, why is "empowerment of the front line" not more popular in our industry?

The landscaping industry has a fear—with some justification—of spawning our own competition. We are afraid that if we make crew chiefs truly self sufficient they will chose to do it for themselves or move to a competitor in our market.

Added to that is the belief that we

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Circle No. 116 on Reader Inquiry Card

have valuable or proprietary information that, if revealed to competitors, could destroy the company. This need for secrecy is left over from the developing days of landscape services.

The reality is, today your competitors already know what they want to know about your business, and don't care about the rest.

Routine legal precautions should discourage your crew chief from "opening shop" in your immediate market. The future will judge us in terms of how much our people know. Jan Carlzon, president of Scandinavian Airlines wrote, "An individual without information cannot take responsibility, and an individual that is given information cannot help but take responsibility."

Our colleagues

We are in the information age and landscape service crew chiefs are examples of knowledge workers of the 1990s. They are specialists who should be treated as colleagues. They have the skills and mobility to change jobs, and they cherish professional dignity as much as money.

It will become normal in the 1990s for landscape service specialists to change jobs more often than in the past. Most will leave, not to form their own company, but to work for another company that will allow them to practice their speciality without undue interference.

The reality is, today your competitors already know what they want to know about your business, and don't care about the rest.

There will be fewer middle managers in the future because fewer are needed when the "power to get it done" rests with on-site people. Middle managers who are left will be coaches, facilitators, and trainers rather than line supervisors.

Self-sufficient crews, managed by working empowered crew chiefs, make better use of overhead. The existing overhead structure can support more self sufficient than dependent crews reducing the overhead that must be recovered by each crew.

Start now with your best crew and work with them until they reach an acceptable level of self-sufficiency. Wean them from the interference of middle management clutter, and watch them soar. **LM**

Phil Christian of Alpharetta, Ga., is a green industry consultant with pdc consultants.

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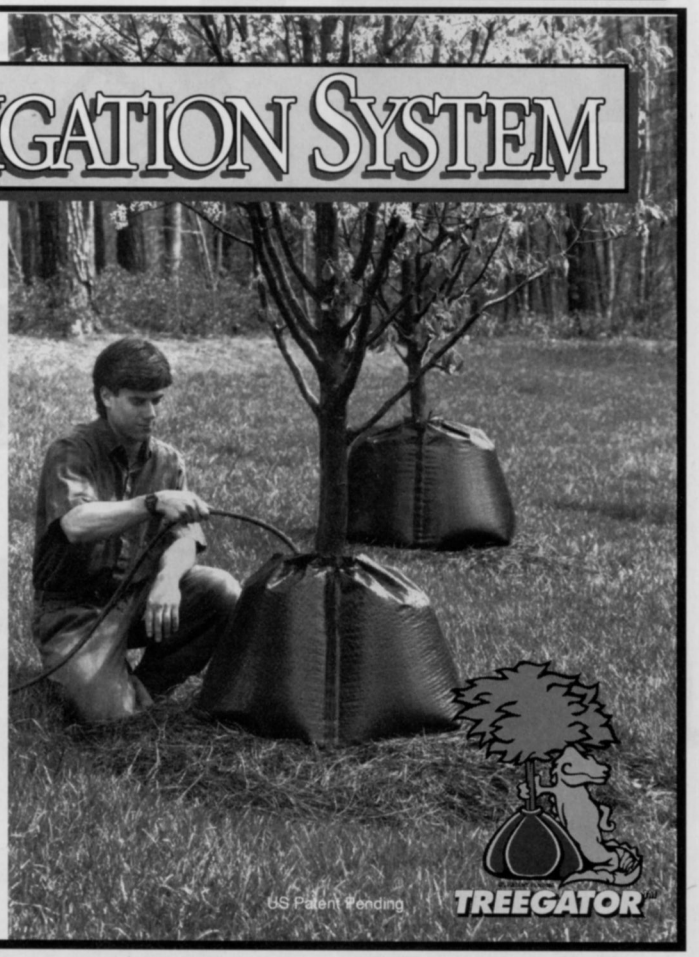


Circle No.125 on Reader Inquiry Card

DON'T MISS THE NATION'S LARGEST REGIONAL TURF SHOW

OTF

25TH ANNUAL CONFERENCE & SHOW

The Ohio Turfgrass Foundation is proud to sponsor the 25th Annual OTF Conference And Show in Cincinnati, Ohio, December 2-5. This year marks the silver anniversary of the OTF show and is sure to be the most exciting ever.

THE REGIONAL SHOW THAT APPEALS TO PROFESSIONALS NATION-WIDE

In 1990, professional lawn care, golf course, maintenance, athletic field, and public turf managers came to Cincinnati from 35 states.

They'll be in Cincinnati again this December to learn from the industry's top experts, to share ideas with over 4,000 other pros like themselves, and to take a close look at one of the nation's largest displays of equipment, turf care products and supplies available to the turf industry.

FOUR OF THE MOST ACTION-PACKED DAYS OF THE TURFGRASS YEAR

Whatever your business or career, you'll find what you need at OTF. The huge show floor of the Cincinnati Convention center will be filled with all the tools of your trade. The educational conference includes university researchers and industry professionals offering sessions and workshops on:

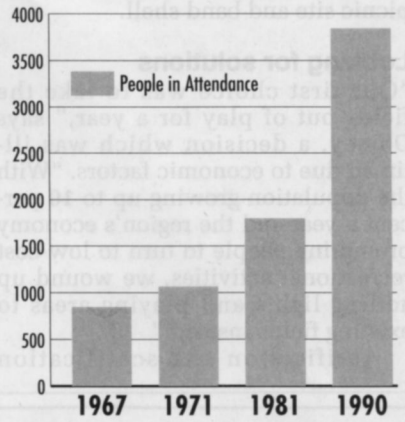
- Golf Turf
- Lawn Care
- Grounds Maintenance
- Sports Turf

Many of these sessions qualify for pesticide recertification credits.

NEW! FOR THE '91 OTF SHOW

New for 1991 will be **Buckeye Beer Garden** on the show floor, and a **Silent Auction** to give you the chance for some fantastic bargains. Be there, and join the fun!

25 YEARS OF STEADY OTF GROWTH



Steady growth for 25 years has attracted over 45,000 green industry professionals to the OTF. Plan now to be in Cincinnati December 2-5 to help celebrate 25 years of industry excellence.

YES! PLEASE SEND MORE INFORMATION ABOUT THE 1991 OTF CONFERENCE & SHOW.

Check appropriate boxes:

- ❑ I'm interested in exhibiting
- ❑ I'm interested in attending
- ❑ I'm interested in OTF membership

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Circle No. 119 on Reader Inquiry Card

Controlled release solves lazy turf green-up

How do you cope with tired turf, a rising demand for recreational land, and a frozen budget? Frank Dorsey, superintendent of the parks and recreation department of Nashua, N.H., was recently faced with those questions.

"Fifty thousand people use our fields every day from early April to mid-December, and we tried everything we could to keep them safe and playable," says Dorsey, who tends 648 acres. Included in his list of responsibilities are a multi-purpose stadium, a softball and soccer complex and a playground with a pool, picnic site and band shell.

Frank Dorsey, right, of Nashua, N.H., found that the Once fertilizer product brought deep green color and even, sustained growth to recreational areas.

Looking for solutions

"Our first choice was to take the fields out of play for a year," says Dorsey, a decision which was ill-timed due to economic factors. "With the population growing up to 10 percent a year and the region's economy prompting people to turn to low-cost recreational activities, we wound up adding lights and playing areas to existing fields instead."

Aerification and scarification were the last resorts, culturally.

"Instead of rebuilding a field or tearing out damaged roots as we might have done with more resources," Dorsey explains, "we overseeded worn areas and bare spots without disturbing the existing mature grass."

A 33-3-10 water soluble fertilizer applied every August, November and May brought short-term results. Spring fertilization created a similar temporary green-up, plus extra mowing and uneven clippings.

Results all season long

A visit to a New Hampshire parks and recreation trade show provided Dorsey with a solution. Once, a controlled release fertilizer described as an "environmentally-sensitive product" by its manufacturer, Grace-Sierra, released nitrogen, phosphorus and potassium continuously for up to a full season with only a single application.

Unlike any slow release product Dorsey had used previously, Once has a special-release mechanism. The nutrients respond to ground temperature rather than water, pH or bacteria.

"Our growth was even and sustained. We sharply decreased our mowing, and our disease problem was a lot less than in the past," says Dorsey.

"Because this new technology eliminates the blushes and fading that leaves turf vulnerable to disease," says Dorsey, "we're able to maintain a higher level of vegetation, which allows a sensitive plant like bluegrass to thrive." **LM**

Turn A New Leaf

Bringing new life to the old neighborhood is as easy as one, two, tree! With the help of our city forester . . . a little muscle and sweat . . . and a lot of fun, we're bringing a fresh new look to our street by planting trees. You can turn a new leaf in your neighborhood, too. For your free booklet, write: Tree City USA, The National Arbor Day Foundation, Nebraska City, NE 68410.

The National Arbor Day Foundation

Soil technology fills porosity gaps

Isolite is described as a breakthrough in soil modification technology which offers a permanent solution to soil management headaches, says its manufacturer, New Golf Concepts, Inc. of Westminster, Colo.

Isolite is a porous ceramic granule of uniform size with about 70 percent pore space throughout each granule. With no "dead-end" pore space, stored moisture is directly available to the plant, the company says. Isolite also does not break down in soil.

According to New Golf Concepts, lack of porosity is a main culprit in problem soils used as a growing medium. An "ideal" soil, says the firm, contains equal mixtures of solids and pore space.

In clay soils, solid particles create a large surface area to which a

thin layer of water adheres tightly. Plants often cannot extract water from the soil solution because attraction is so great and the water is unavailable. Result: poor plant growth. Also, clay-rich soil is more susceptible to compaction in high traffic which decreases macroporosity.

By contrast, sandy soils abound in macro pores, which leads to drought-like conditions. New Golf Concepts says a golf green can be an excellent example of a soil which is too sandy to retain enough water to sustain healthy plant growth without constant irrigation and management.

Adding the product to the rootzone can achieve the needed balance between micro- and macroporosity. Also, Isolite adds bacteriological temperature and water buffering especially important in sandy soils.

Circle No. 191 on Reader Inquiry Card

Read what supers say about this bentgrass

After 12 years of research and testing at Penn State University, PennLinks creeping bentgrass was marketed as a

deep-rooting species which provides a grainless putting surface.

"PennLinks Tried and True Testimonials" is a compendium of testimonials from superintendents in the U.S. and England on the quality of PennLinks creeping bentgrass.

Tee-2-Green Corp., of Hubbard, Ore., says PennLinks sets new standards for upright growth, putting surface quality, wear tolerance and turf establishment.

Tee-2-Green also markets PennCross, PennEagle and PennWay Blend creeping bentgrass.

Circle No. 192 on Reader Inquiry Card

Creeping red fescue now on the market

Fine Lawn Research now offers Flyer, a new variety of creeping red fescue.

The company says Flyer produces a fine, dense, deep green turf which received overall quality ratings in the 1984 National Fine Leaf Fescue tests.

The firm says the variety is particularly suited to blend well with Kentucky bluegrass and enhances turf-type tall fescues and perennial ryes.

Circle No. 193 on Reader Inquiry Card

Turf-type tall fescue low growing, low maintenance

Rebel, Jr. from Lofts Seed, Inc. is darker than other turf-type tall fescues, says Dr. Richard Hurley, VP

and Research Director for the firm.

Rebel Jr. has a darker green color, offers moderately low growth with excellent performance in full sun or moderate shade and needs low to medium maintenances, says the company.

The variety adapts to a wide range of environments and is resistant to insect and disease damage.
Circle No.194 on Reader Inquiry Card

Kentucky bluegrass ranks among the best

From Jacklin Seed Co. comes Suffolk Kentucky bluegrass, a variety which consistently ranked in the upper third in quality ratings of 72 like varieties, reports Jacklin.

Suffolk is a new, moderately low-growing, medium dark-green variety which has high test results in resistance to fusarium blight, powdery mildew, leafspot and dollar spot.
Circle No. 195 on Reader Inquiry Card

Three seed varieties enter the market

Three top-rated seed varieties from O.M. Scott & Sons Co. will hit the market as part of the Scotts ProTurf product line.

The varieties are: Sonesta seeded bermudagrass, Aztec tall fescue and Brigade (formerly Melody) hard fescue.

Sonesta will have limited availability this fall. The company says based on National Turfgrass Evaluation Program results, the variety will be the highest quality seeded bermuda on the market.

Aztec, an improved tall fescue, will be marketed next year. Dark green and fine textured, the variety received high ratings in national trials in 1988 and 1989.

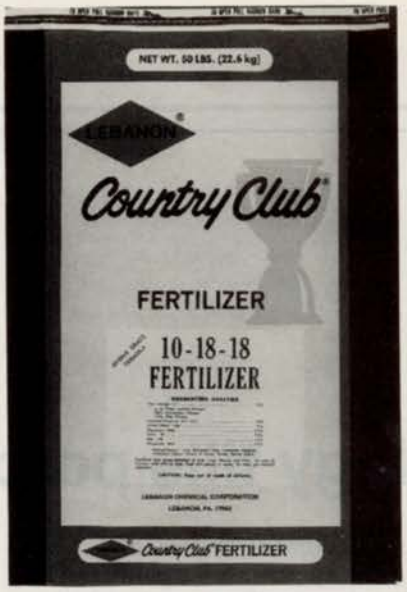
Brigade will also be on the market in 1992. Ranking fifth out of 93 entries, the hard fescue placed well in national fine fescue tests.
Circle No. 196 on Reader Inquiry Card

Starter fertilizer lends a hand on greens, tees

Lebanon Turf Products recently introduced Country Club 10-18-18 AOS starter fertilizer which the company claims assures successful seeding and even nutrient distribution.

Country Club 10-18-18 AOS (aerification, overseeding, starter) contains the 1-2-2 ratio including 35 percent organic nitrogen, 2.2 units water insoluble nitrogen for safe and sustained feeding and 100 percent sulfate of potash.

Lebanon Turf Products says the fertilizer may be used effectively in aerification and topseeding, providing sufficient amounts of phosphorus and potassium while keeping available nitrogen at a manageable level. Spoon feeding cool season turf in overseeding situations is possible.
Circle No. 197 on Reader Inquiry Card



Three turfgrasses now available commercially

Able-1, Honor Roll and Front Runner are available in ample supply from manufacturer Davenport Seed Corp. in Davenport, Wash.

Able-1 is a deep blue-green turf with dense, uniform growth. The company says the variety shows excellent disease resistance, early spring green-up, and high tolerance to heat, cold, drought, shade and wear.

Front Runner, a tall fescue, blends the qualities of Avanti, Guardian and Chieftain varieties, according to the company. Bright green in color, the product has high grassplant density, excellent low vertical growth, fine leaf texture and superior disease resistance.

Honor Roll premium bluegrass sod blend features the primary cultivar A-34 BenSun, the premium bluegrass which has been popular with growers for 20 years.
Circle No. 198 on Reader Inquiry Card

Self-healing tire more than normal sealant

Synair Corp. now markets the TyrLyrner, a self-healing rubber liner for tires that the company says prevents puncture flats.

The TyrLyner bonds a layer of rubber to the tire casting, converting any pneumatic tire into one protected against air leaks. Synair says the process gives uniform coverage over the most vulnerable areas. It is called 99 percent effective in preventing puncture flats.
Circle No. 199 on Reader Inquiry Card

Tall fescue blend fills need in Southeast

Confederate brand tall fescue blend addresses the needs of the Southeast turfgrass market, according to Turf-Seed, Inc.

The blend contains Olympic II, Apache and Monarch plus the newly-released Safari. Since Confederate is a branded blend, the company says it will be upgraded with newer, improved varieties as they become available. The Safari component has improved brown patch resistance that is important to the Southeast region.

Confederate has a dark green color, and a moderate growth habit, which Turf-Seed says makes it adaptable and quick to establish.
Circle No. 200 on Reader Inquiry Card

Bermudagrass seed in many quantities

Numex Sahara bermudagrass is now available in one-, three-, five- and 50-pound bags and a 25-pound pail, manufacturer Farmers Marketing Corp. announces.

Numex Sahara is a seeded, turf-type bermudagrass with fine leaf texture, dark green color and uniform appearance, the company says. The variety shows superior drought avoidance characteristics and is recommended for lawns, sports fields, fairways, tees and roughs.
Circle No. 201 on Reader Inquiry Card

Events *from page 20*

N.Washington Ave., Suite 2, Lansing, MI 48906.

22: Michigan State University Turfgrass Field Day, Trade Show and Equipment Auction, Hancock Turfgrass Research Center, MSU campus. Contact: Dr. Bruce Branham, MSU Dept. of Crop and Soil Sciences, E. Lansing, MI 48824; (517) 353-2033.

22-23: Pennsylvania Landscape and Nursery Trade Show and Conference, ExpoMart, Monroeville, Pa. Contact: PNA, 1924 North Second St., Harrisburg, PA, 17102; (717) 238-1673.

SEPTEMBER

15-17: The Fertilizer Institute's World Fertilizer Conference, NY, N.Y. Contact: The Institute, 501 Second St. NE, Washington, DC 20002. **LM**

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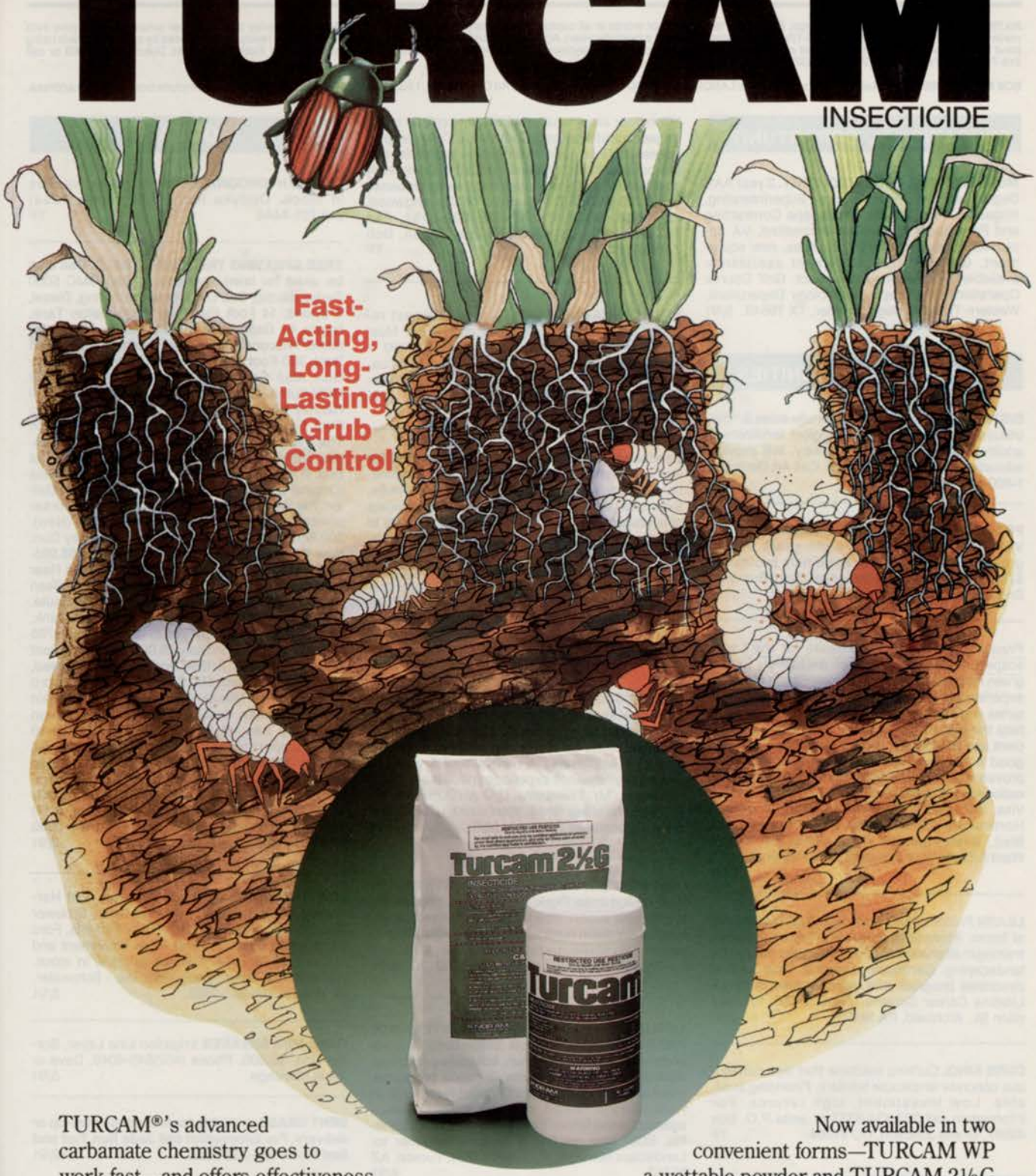

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Circle No. 118 on Reader Inquiry Card

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LEARN Professional Landscaping and Gardening at home. Accredited program provides thorough training in all phases of commercial and residential landscaping. Certificate awarded. Free booklet describes program and opportunities in detail. Lifetime Career Schools, Dept. A-480, 101 Harrison St., Archbald, PA 18403. 9/91

CURB KING: Curbing machine that lays continuous concrete landscape borders. Financing available. Low investment, high returns. For information call 303-434-5337 or write P.O. Box 40567, Grand Junction, CO 81504. TF

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Swingle Tree Company, Denver, Colorado, an industry leader since 1947 is looking for a supervisor for our tree spraying department. *Min. 2-3 yrs. experience in diagnosis and recommendations. *Working knowledge of tree spraying equipment. *Excellent communication skills combined with field and supervisory experience. *2-4 year related degree desired. *Health, Dental and Pension Plan. *Salary range: $21,000-$25,000. Call Tom or Greg (303)337-6200. 8/91

"Consider all of your employment options in the irrigation and landscape industries. Call **Florapersonnel,** the international employee search firm for the ornamental horticulture industry. Completely confidential. Employer pays fee. **Florapersonnel, Inc.,** 2180 West S.R. 434, Suite 6152, Longwood, FL 32779-5008. Phone 407-682-5151, Fax 407-682-2318. Jeff Brower, Joe Dalton, Bob Zahra, CPC." TF

BRANCH MANAGER: For large southeast regional landscape maintenance contractor. Must have 3 years experience running a $1,000,000 + branch. Must posses good operational and customer service abilities. Excellent salary and benefits. Send resume to LM Box 488. 8/91

Landscape Maintenance Manager needed for well established firm in Mid-Atlantic state. Individual must possess enthusiasm, organization skills, extensive background and knowledge of all facets of landscape and grounds maintenance. Ability to do some design work. Experience with lawn irrigation required. Degree in horticulture preferred. Experience and track record of managing maintenance crews a must. Excellent salary plus benefits. Send resume and salary history in complete confidence to LM Box 487. Position available approx. Sept. 1, 1991. 8/91

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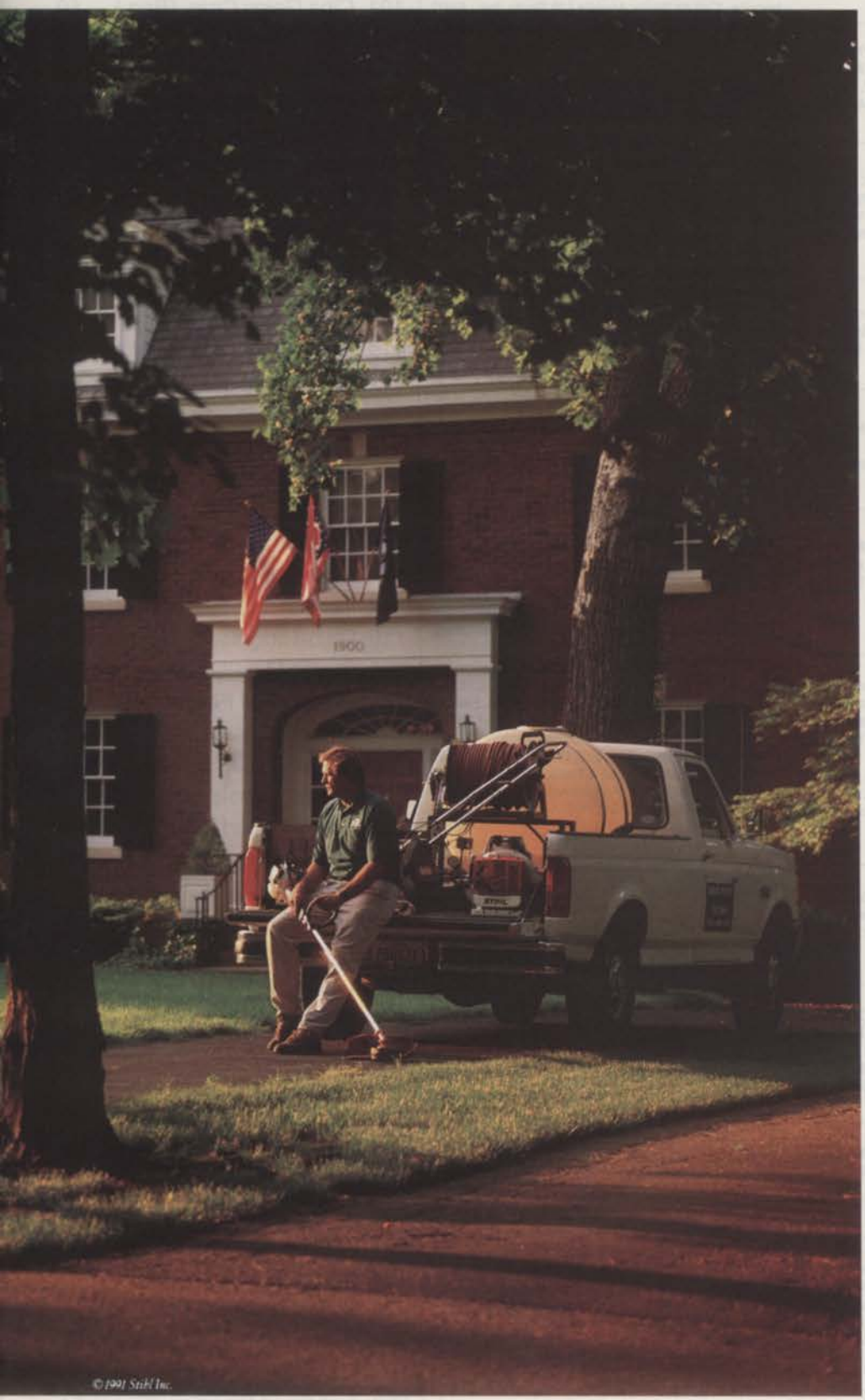

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BUCKET TRUCK: Hi Ranger 65', 57', 50'. Skyworkers with chip boxes. Asplundh bucket trucks with chip boxes. Asplundh brush chippers. Bean 55 gal. sprayers. Pete Mainka Enterprises, 633 Cecilia Drive, Pewaukee, WI 53072. 414-691-4306. TF

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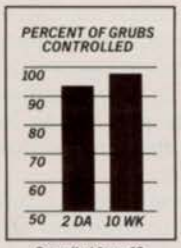
When it comes to grubs, it's not enough just to suppress them.

You want to squash them. Pulverize them. Grind them into dust. Send the little buggers to the root zone eternal.

And who could blame you?

After all, this one creature has probably baffled more turf professionals, made a mockery of more chemical company claims, than all other turf insects combined.



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So one preventive application in late summer or early fall is all that's needed to protect turf from costly grub damage.

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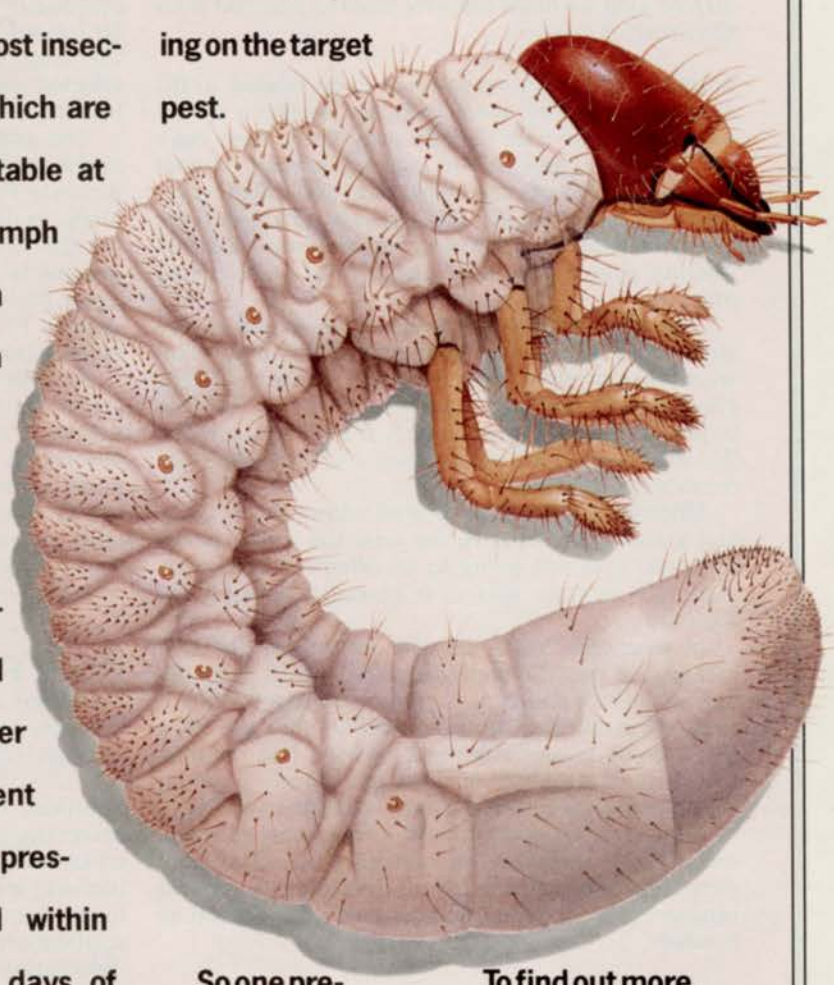

To find out more, contact your turf products distributor or Ciba-Geigy representative.

TRIUMPH

HOW TO SQUASH A GRUB.

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PROBLEM MANAGEMENT

Can wells be too close to trees?

Problem: *We have several maple trees showing sparse crown with smaller leaves. There is quite a bit of dead wood. Last year there was some construction, and builders put soils around one side of these trees, about two to three feet high. We believe the problem is related to the stress from the fill. We are interested in removing the excess soil and putting in a well. How far back from the trunk do we need to build the well? The crown diameter is about 20 feet. Can we build the well three to four feet from the trunk? (Ohio)*

Solution: The problem appears to be related to fill damage. Generally, most trees are sensitive to any new soil placed over the root area. Some trees can't tolerate even a half-inch of new soil around the root system. The fill causes compaction and affects aeration and water tables. As a result, affected trees begin to show various degrees of symptoms and decline over a period of one to four years. They often die.

The construction of a tree well to minimize the stress from fill is often recommended. The problem we see is that often these wells are constructed very close (one to two feet) from the tree trunk. Ideally, to protect the roots, particularly the absorbing roots, the well should be constructed alongside the foot outside the dripline.

Otherwise, if the fill is placed within the dripline and a small well constructed near the trunk, in my opinion, it is not going to be effective unless an elaborate aeration system is installed beneath the fill soil.

In your case, since the soil was put on the root area a year ago, the damaging effect of fill probably has already started. Try to remove as much fill soil as possible and then aerify. make sure this operation is not going to hurt any roots growing into the new soil. If large numbers of roots are already growing into the new soil, leave them as is and then aerify.

Deep root fertilization with slow-release nitrogen and proper watering should help stimulate the growth and development of absorbing roots and improve plant health. Consider pest management as needed.

Anthracnose on sycamores

Problem: *We have been having severe problems with anthracnose disease on sycamore. Is it true that we can inject Arbotect 20S fungicide to manage sycamore anthracnose? (Pennsylvania)*

Solution: The American sycamore is planted extensively in many urban areas throughout the U.S. Anthracnose is a common fungal disease caused by Gnomonia platani on sycamore trees during early spring. Because of the monoculture of sycamore in many areas, the disease can spread rapidly from tree to tree and become very unsightly.

Four distinct stages of sycamore anthracnose have been identified; however, all stages may not develop in a single year:

Twig blight: small, one-year-old twigs are killed before the leaves emerge in the spring. Affected twigs may have canker around buds.

Bud blight: symptoms appear when buds expand in the spring. Buds are generally killed by cankers.

Shoot blight: is more visible than bud blight. In this case, shoots and young leaves die suddenly. The symptoms often mimic frost injury and are difficult to diagnose.

Leaf blight: small lesions appear on leaves which eventually become large and produce necrotic angular lesions along the veins. Brown fruiting bodies of the fungus develop in diseased leaf tissue. The affected areas become discolored and the entire leaf becomes defoliated.

The anthracnose disease is favored by cool and moist conditions during spring and fall. Reports indicate that disease severity, particularly shoot blight, is determined by the mean temperatures during the two-week period following budbreak. The disease is usually more severe when the average mean daily temperature for the period is 50 to 55 degrees F. As the temperature increases above that range, disease severity decreases.

Arbotect 20S can be trunk-injected to manage sycamore anthracnose. Reports indicate that one injection of Arbotect 20S in the fall before leaf abscission can help manage the disease for three growing seasons. An alternative approach is to manage the anthracnose disease by treating the foliage with recommended fungicides such as Benomyl or Cleary's 3336.

Follow label specifications for better results.

Does Polycote protect buds?

Problem: *A product representative claims that Polycote will protect buds and twigs. What is your opinion? (Illinois)*

Solution: We at Davey Tree are researching water-absorbing polymers of liquid gels which are marketed as having the ability to improve soil aeration and increase water holding capacity. I'm not sure if you mean protection of buds and twigs from direct application or from their alleged ability to prevent desiccation by improving soil water retention It is always a good practice to request research data to support any claims made about a product.

It would be premature to comment on our research, which is in the prliminary stage of a three-year study.

Balakrishna Rao is Manager of Technical Resources for the Davey Tree Co., Kent, Ohio.

Questions should be mailed to Problem Management, LANDSCAPE MANAGEMENT, 7500 Old Oak Boulevard, Cleveland, OH 44130. Please allow 2-3 months for an answer to appear in the magazine.

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